R
11
N57
V. 184
no. 21
cop. 2

SEP

THE BOSTON
Medical and Surgical
JOURNAL

Published by the MASSACHUSETTS MEDICAL SOCIETY — Official Organ of the NEW ENGLAND SURGICAL SOCIETY

$6 per Annum, 25c per copy
Vol. CLXXXIV, No. 21

THURSDAY, MAY 26, 1921

Published weekly in Boston, at 126 Massachusetts Avenue

CONTENTS

ORIGINAL ARTICLES

Infraction of the Second Metatarsal Head. *By Charles F. Painter, M.D.*, Boston.

Importance of the Public Health Nurse in the Tuberculosis Campaign. *By Joseph H. Pratt, M.D.*, Boston.

Cerebral Hemorrhage of the New-Born. *By Frederick C. Irving, M.D.*, Boston.

The Essential Factors of Cancer Causation. *By James W. Shannon, M.B.*, San Diego, Calif.

SELECTED ARTICLE

Public Health Considerations Relating to Influenza, Pneumonia, and Allied Epidemics. *By F. G. Crookshank, M.D., F.R.C.P.*, London.

EDITORIALS

The First State Section Meeting of the American College of Surgeons.

For complete table of contents, see first text page.

THE NEXT ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY WILL BE HELD IN BOSTON, TUESDAY, MAY 31, AND WEDNESDAY, JUNE 1, 1921.

Interpretation of Symptoms

That, in a few words, is the keynote of *Cabot's Differential Diagnosis.*

The work consists of 702 case-histories selected from a total of 180,000. These case-histories are grouped according to the chief symptoms—the complaints which urged the patient to seek treatment.
Preceding each chapter is a graphic chart showing the relative frequency of the various causes producing the particular symptoms about to be discussed. For instance, if you have a patient whose chief symptom is dyspepsia, a glance at the chart will show that in 16,800 cases of dyspepsia, heart disease was the cause in 17%, phthisis the cause in 11%, and that of all the cases analyzed *stomach trouble was the cause in only 16¼%!*
Since there is no dividing line in diagnosis—the line being drawn *after* the diagnosis is made—Dr. Cabot's work is as serviceable to the surgeon as to the internist. Indeed, it may be more so, because frequently the *difficult cases* are passed over to the surgeon.

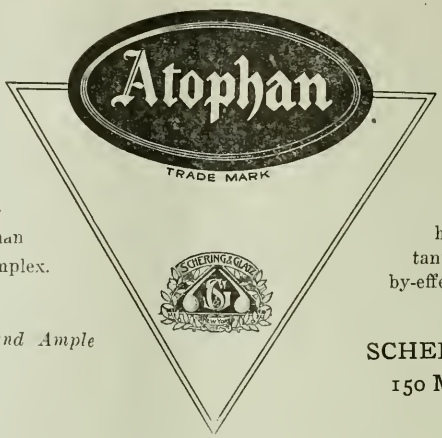
Failures can teach more than successes. Dr. Cabot realized this, and set down with extraordinary candor many cases in which autopsy showed his mistakes.

Dr. Cabot's work does not present technic, either physical or laboratory. The methods he discusses are purely intellectual; that is, reasoning *backward* from a symptom, and by elimination reaching the disease which is causing that symptom. This work is a *thinking man's diagnosis.* It is a text-book on the *interpretation of symptoms* —a text-book of experience.

Differential Diagnosis. Two octavos of about 700 pages each, illustrated. By Richard C. Cabot, M.D., Professor of Clinical Medicine, Harvard Medical School. Per volume: Cloth, $9.00 net.

W. B. SAUNDERS COMPANY — Philadelphia and London

Entered at the Post-office at Boston as second-class matter.



Has decidedly more prompt pain, inflammation and congestion relieving properties than the Salicylates, simple or complex.

Information, Literature and Ample Trial Quantity from

Besides showing a remarkable degree of freedom from heart-depressant, kidney irritant, constipating and cumulative by-effects.

SCHERING & GLATZ, INC.
150 Maiden Lane, New York

RHEUMATISM

HAY FEVER MEMORANDA

(SERIES II.)

Late Spring Type. Patients whose hay fever develops in the latter part of May, or during June, should be tested with the pollens of the chief grasses, such as orchard grass, timothy, red-top—and certain flowering weeds.

Late Summer Type. Patients whose hay fever develops in mid-August and continues until frost, should be tested with the pollens of such weeds as ragweed and goldenrod, the related sunflower, also with the pollens of the one important late flowering grass, viz. corn, if exposed to same.

ARLCO-POLLEN EXTRACTS

For Cutaneous Tests and Treatment cover early and late spring, also summer and autumn.

Literature and List of Pollens on Request.

THE ARLINGTON CHEMICAL CO.

Yonkers, New York

Digitan (Digipuratum)

Physiologically Standardized Digitannoids

This product, first introduced as Digipuratum, is manufactured under license from the Federal Trade Commission and carefully standardized according to the original tests.

RAPID AND RELIABLE IN ACTION

UNIFORM IN STRENGTH

Supplied in Powder and 1½ Grain Tablets

1 tablet Digitan or 1½ grains powder equal to 1½ grains strongly active digitalis leaves (=8 frog units).

MERCK & CO.,
New York and St. Louis, Mo.

In summer diarrhea, intestinal catarrhs, etc.

Tannalbin

DOSE: Infants: 2 to 6 grains several times a day in gruel. Children: 7½ to 15 grains. Adults: Half a teaspoonful (15 to 30 grains in powder or 5-grain tablets) three to five times a day at hourly intervals.

Supplied by the Drug Trade in 5-grain Tablets and Powder

For Literature and Samples apply to E. BILHUBER, Inc., 45 John Street, New York

Organotherapeutic Suggestions

HYPERTENSION

Functional high blood pressure has been reduced repeatedly by **No. 30—Caps. Thyro-Pancreas Co. with Ovary** (for women especially at the menopause, or **No. 29—ditto with Spermin** (for men). The essential principles involve the antagonism between the pancreas and the adrenal pressor function, the cell-stimulating effect of thyroid and the tonic value of the sex-gland principles. Provided the tension is not organic, it may be reduced from 20 to 100 mm. by this method. Dose: 1, q.i.d., or, occasionally, 2, t.i.d.

Results from Adrenal Support

"For years I have fallen down on many cases of neurasthenia and those tired-out 'no-goods' that so often bother us. Your ideas about hypoadrenia and your Caps. Adreno-Spermin Co. have been a surprise. The results are nothing short of wonderful. . . ."

THE REASON

Adreno-Spermin Co. (Harrower) contains suitable doses of thyroid (to increase cellular oxidization), adrenal (to support the depleted adrenals), and spermin (to serve as a muscular and cellular stimulant). The excipient is calcium glycerophosphate. Try one q.i.d. in a few cases and see how it raises low blood pressure, increases 24-hour urea and generally antagonizes "peplessness."

The booklet "*Adrenal Support*" will be sent to interested physicians on request.

THE HARROWER LABORATORY

New York, 31 Park Place — Chicago, 180 N. La Salle St.
Baltimore, 4 E. Redwood St. — Portland, Ore., 610 Pittock Block
Denver, 621 Central Savings Bank Bldg.

Note: There are still several copies of the 272-page, cloth-bound $2.50 book, "Practical Organotherapy," available. Get a copy at once by sending only 25 cents for delivery charges.

Physicians have found that

COMPOUND

Urimene Powder

is valuable as a
"clean-up" treatment,
during or after any infection,
eliminating the toxins
from the system

An excellent antiseptic
and saline eliminant
for use in cases of

Intestinal Fermentation
Auto-Intoxication
Cystitis

Albuminuria of Pregnancy
and
Rheumatic Conditions

COMPOUND URIMENE POWDER
contains
(in each dessertspoonful)

URIMENE (Hexamethylene)	5 grs.
ACID SODIUM PHOSPHATE	30 grs.
LITHIUM CITRATE	5 grs.
SODIUM SULPHATE	8 grs.
SODIUM TARTRATE	q. s.

THREE SIZES
Small, Medium and Large

WOULD YOU LIKE A SAMPLE?

The E. L. PATCH COMPANY
STONEHAM 80, BOSTON, MASS.

Current Literature Department.

ABSTRACTORS.

Gerardo M. Balboni, M.D. George G. Smith, M.D.
Laurence D. Chapin, M.D. William D. Smith, M.D.
John B. Hawes, 2d, M.D. Lesley H. Spooner, M.D.
Edward H. Risley, M.D. Wilder Tileston, M.D.

SURGERY.

An Address on the Hour-Glass Stomach.

Holland, C. T. (*Brit. Med. Jour.*, Jan. 1, 1921) discusses the general subject of hour-glass stomach, and summarizes his opinion as follows:

1. Hour-glass contraction from simple ulcer is a comparatively common condition—frequent in females, rare in males.
2. Its symptomatic history is a long one.
3. It is almost entirely an x-ray diagnosis.
4. It rarely ends in malignant disease—especially in females.
5. An hour-glass condition is found in a few cases, mostly in males, and with a short history, which is caused by malignant disease. Its x-ray appearances generally differ considerably from those seen in the non-malignant type, and are suggestive.
6. The experiences of a large x-ray department are strongly opposed to the theory that it is usual for cancer of the stomach to be preceeded by a simple ulcer. [J. B. H.]

Spinal Irrigation in Meningitis.

Brahmachari (*Ind. Med. Gazette*, September, 1920) reports nine cases of epidemic cerebrospinal meningitis treated by spinal irrigation with electrargol. Lumbar puncture was made between the second and third lumbar vertebrae, and one to two ounces of cerebrospinal fluid withdrawn in the usual way. Fifteen c.c. of a dilute (1 : 10) solution of electrargol in normal saline was then introduced with a syringe. The foot of the bed was raised for two to three minutes, then lowered and the fluid allowed to run out. This procedure was repeated several times (six or seven) and finally a small amount of electrargol solution was allowed to remain inside. These irrigations were given every third or fourth day, depending upon the effect of the previous dose on the clinical symptoms. In two of the cases, each irrigation was followed by a sharp rigor. Otherwise, there were no untoward effects.

The writer considers that these cases compare very favorably with those treated with intrathecal injection of meningococcus serum or with repeated lumbar puncture. He believes that the combination of spinal irrigation with non-irritating antiseptics of the nature of collargol, or electrargol with intraspinal injection of anti-meningococcus serum after lumbar puncture, should prove valuable in the treatment of this disease. [L. D. C.]

Drainage of the Common Bile Duct through the Cystic Duct. Cysto-Choledochostomy.

Reid, M. R. (*Ann. Surg.*, April, 1921) presents the technic of this new procedure and advocates it as a routine, when possible, in the drainage of the common duct. The drainage tube is generally left in about five days. It does not heal around the tube and is an admirable way to take care of the temporary bile drainage. The procedure seems logical and valuable. [E. H. R.]

SACRO-ILIAC

SUPPORTERS

A SPECIALTY

100% Efficient. Make Us Prove This

Elastic Stockings, Anklets, Knee Caps, Abdominal Supporters. Custom and Ready Made.

All kinds and styles of supporters for umbilical hernia, weak back, prolapsed stomach, large abdomen and after all abdominal operations or any weakness requiring support.

These Goods Manufactured by Us on Premises

Buy direct from the maker this time and see the difference in fit, quality and service.

EVERY MAN TO HIS TRADE

W. H. PHELPS & COMPANY

156 Washington St. (Adams Square) BOSTON, MASS.

Established 1832 HALL & CARTER, Props Open Sat 9 P.M.

ARSPHENAMINE ("606")

and

NEOARSPHENAMINE ("914")

Our arsphenamine and neoarsphenamine have achieved an enviable reputation. Our large research staff is constantly at work upon the elaboration of the least toxic and most therapeutically active compounds. **Our laboratories are not in any sense conducted for private gain,** and we can, therefore, afford to devote our proceeds to research in chemotherapy.

The value of neoarsphenamine is directly related to two factors—its toxicity and its therapeutic effect. **The toxicity of neoarsphenamine can be reduced to such an extent that it will pass at figures far beyond the Government requirements;** as a rule, these products will have a lower therapeutic effect. **THE BEST PRODUCT IS THE ONE POSSESSING THE HIGHEST CHEMOTHERAPEUTIC INDEX.** (i.e., the ratio of the maximum tolerated to the curative dose). **THIS DESIDERATUM IS OUR CONSTANT AIM.**

DERMATOLOGICAL RESEARCH LABORATORIES

1720 Lombard St. and 1713-23 Naudain St.

Philadelphia, Pa.

"E.F.M." Perfect Catgut

The Catgut with a reputation for

Sterility—Suppleness
Strength

The "E. F. M." Catgut is found in the operating rooms of most of the hospitals in New England and is used by many of the most prominent surgeons. They realize that the "E. F. M." is the last word in catgut production.

E. F. Mahady Company

671 Boylston Street BOSTON, M SS.

PHYSICIANS MUST HAVE DEPENDABLE TRANSPORTATION

THE STEARNS KNIGHT CAR

Can be relied on under all conditions.

The engine and chassis represent the best type of automobile construction.

Apply for demonstration to

J. H. MacALMAN, 100 Massachusetts Ave.

(Mention the Boston Medical and Surgical Journal)

Write For Catalog

"When you need Auto Supplies See John & Arthur"

"Everything for the Automobile"

169 Mass. Ave. Boston, Mass.
John J. Mahoney, Pres. Treas. Tel. B. B. 6363

Sherman's Polyvalent Vaccines in Respiratory Infections

A more adequate and rapid immunity is established with polyvalent vaccines than from an infection itself. SHERMAN'S POLYVALENT VACCINES WHEN GIVEN EARLY IN RESPIRATORY INFECTIONS. rapidly stimulate the metabolism and defense of the body with a resultant prompt recovery.

Administered in advanced cases of respiratory infections, they usually ameliorate or abbreviate the course of the disease. Even when used as the last desperate expedient, they often reverse unfavorable prognoses. SUCCESSFUL IMMUNOLOGISTS MAKE INOCULATIONS IN RESPIRATORY INFECTIONS AT THEIR FIRST CALL.

Hay fever, colds, laryngitis pharyngitis, adenitis, catarrh, asthma, bronchitis, pneumonia, whooping cough and influenza are diseases amenable to bacterial vaccines.

Sherman's polyvalent vaccines are dependable antigens

LABORATORIES OF

DAILY USERS OF VACCINES USE SHERMAN'S

G. H. SHERMAN M.D.
Detroit, Mich. U.S.A.

"Largest producer of stock and autogenous vaccines"

A New Use

One of the newer uses of a culture of Bacillus Bulgaricus is as an irrigant in alkaline cystitis.

B. B. CULTURE is eminently adapted to this work, being highly viable and of a form convenient for administration.

If not familiar with this use of **B. B. CULTURE,** we will be pleased to furnish sufficient samples for clinical trial.

B. B. CULTURE LABORATORY
INCORPORATED
YONKERS, NEW YORK

Oral Prophylaxis

MOUTH CLEANLINESS is no longer merely a matter of personal inclination or desire; medical men now recognize it as an essential detail in the prevention of disease.

THE MOUTH offers an ideal dwelling place for germs; it is of just the right temperature and moisture, and unless regularly cleansed, there are always enough decomposing food particles in the deep tissue folds and around the teeth to attract and favor the retention of all sorts of pathogenic bacteria.

NEGLECT OF THE MOUTH means a constant invitation to many of the acute diseases.

A CLEAN MOUTH is, therefore, the first consideration in the modern scheme of personal hygiene.

DIOXOGEN—the best and purest peroxide of hydrogen—is an invaluable mouth-cleanser. Owing its antiseptic qualities to pure oxygen—the same agent—that makes sunshine and good air the most efficient of germ-destroyers, Dioxogen penetrates to the deepest recesses of the mouth, where it softens and detaches all accumulated material, and cleanses and purifies everything it touches.

DIOXOGEN is not a mixture containing aromatic flavors or other substances to convey the idea of great antiseptic power. It is, instead, colorless, odorless and almost tasteless, with a germicidal efficiency superior to the solutions of carbolic or bichloride ordinarily used, but without the slightest toxic or irritating effect.

DIOXOGEN, in consequence, can be used as freely as necessary or desired, in even the youngest patients, with absolute certainty not only that it will keep the mouth and teeth in a clean and wholesome condition, but that it will always do its work in a pleasant and agreeable manner.

THE OAKLAND CHEMICAL COMPANY

59 Fourth Avenue
New York City

Doctor:-

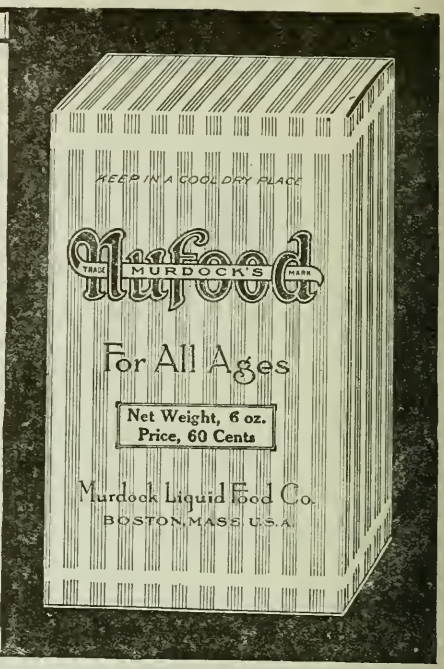
Try our

TRADE MURDOCK'S MARK Mufood

a diet of

Milk-Eggs-Malt Extract

Samples on request



SCOLIOSIS BRACE

F. H. THOMAS COMPANY

689-691 Boylston St., Boston, Mass.

A FEATURE OF OUR SERVICE

An orthopedic shop where orthopedic apparatus of the most approved type is made promptly and correctly, in accordance with specifications, under the direct supervision of a foreman with twenty years' training and experience in hospital shops.

Fitting rooms and men and women attendants experienced in the proper adaptation of all orthopedic apparatus, trusses, belts, and elastic hosiery.

Quality Dependability Service

The Boston Medical and Surgical Journal

TABLE OF CONTENTS

May 26, 1921

ORIGINAL ARTICLES

INFRACTION OF THE SECOND METATARSAL HEAD. *By Charles F. Painter, M.D.*, Boston. 533

THE IMPORTANCE OF THE PUBLIC HEALTH NURSE IN THE TUBERCULOSIS CAMPAIGN. *By Joseph H. Pratt, M.D.*, Boston. 537

CEREBRAL HEMORRHAGE OF THE NEW-BORN. *By Frederick C. Irving, M.D.*, Boston. 539

THE ESSENTIAL FACTORS OF CANCER CAUSATION. *By James W. Shannon, M.B.*, San Diego, Calif. (*To be continued.*) 542

SELECTED ARTICLE

PUBLIC HEALTH CONSIDERATIONS RELATING TO INFLUENZA, PNEUMONIA AND ALLIED EPIDEMICS,—THE EPIDEMIOLOGICAL POINT OF VIEW. *By F. G. Crookshank, M.D., F.R.C.P.*, London. 548

BOOK REVIEWS

Studies in Neurology. By Henry Head, M.D., F.R.C.S. 552

Public Health Laboratory Work. By Henry R. Kenwood, C.M.G., M.B., F.R.S. Edin., D.P.H., F.C.S. 552

EDITORIAL

THE FIRST STATE SECTION MEETING OF THE AMERICAN COLLEGE OF SURGEONS. 553

NOTES FROM DISTRICT SOCIETIES. 557

MEDICAL NOTES. 558

THE MASSACHUSETTS MEDICAL SOCIETY. 560

MISCELLANY

NOTICES, RECENT DEATHS, ETC. 562

Original Articles.

INFRACTION OF THE SECOND METATARSAL HEAD.

BY CHARLES F. PAINTER, M.D., BOSTON.

IN July, 1920, a boy of seventeen consulted me because of pain in the fore part of his left foot when he walked. He was a student at one of the private schools near the city and while playing baseball, about two months before, injured the foot in sliding to second base. Just what happened, he does not know. It caused him some discomfort at the time, and after the game, he went to the school infirmary, where the foot was bandaged. At the time, there was very little to show for the injury; no ecchymosis or abrasion, some tenderness to palpation about the second metatarso-phalangeal joint and soreness in this articulation when he walked, causing him to limp a little. He kept about on his foot as usual, and when school closed for the summer, shortly after, he went to work on his father's farm, where he engaged in such labor as a husky boy of seventeen would naturally do upon a small farm.

The acute soreness which immediately succeeded the injury subsided to some extent, but did not seem inclined to go wholly away. Because of the persistence of this soreness and the slight but continuous character of the discomfort which he felt in the region above described, and the fact that pressure over the second metatarsal head was painful, he sought advice as to what he had best do. This was about the end of July. When I first examined him, he did not limp in walking, but upon examining the foot and making comparison with the other foot, it was at once noticed that there was a slight amount of swelling about the second, left metatarsal for perhaps a half or three-quarters of an inch along the shaft of the metatarsal, back from the joint, and to a lesser extent on the adjoining phalanx. Firm pressure elicited slight tenderness both on the dorsal and plantar aspects of the joint. There was no redness or increase in the surface temperature. Attempts to move the phalanx passively on the metatarsal were painful, and motion to a normal extent was not possible. There did not seem to be any muscle spasm. There were no other joints involved.

An x-ray examination was made which showed (see Fig. 1) a clearly cut separation of a thin sliver of the cartilage covering the distal articular end of the second metatarsal. The separation was apparently about an eighth of an inch in width. A faint haziness was noted

Fig. 1.—Note the separation of the cartilaginous end of the second metatarsal from the shaft of the bone.

between the two fragments. There was no indication of inflammatory exudate about this line of separation between the cartilage and the bone of which it was the terminus. The corresponding joint of the uninjured foot showed no similar appearance. There was slight capsular thickening. There was obviously some sort of discontinuity between the cartilage and the bone and trauma had been definitely associated with the beginning of the symptoms. As I had never seen anything just like it before, I sent the boy home to keep off the foot for two weeks, in order to try the effect of rest and see if any repair would take place under such treatment in a period of two weeks. In the interval, I instituted some investigation as to what the condition represented. Dr. Frederick Cotton remembered that cases of this sort had been reported by Dr. Albert Freiberg of Cincinnati, and reference will be made later to his observation upon the condition. I have adopted the name he has applied to the condition in the title of his communication.

At the expiration of two weeks, I saw the patient a second time and had another x-ray taken. No change had taken place, as revealed by this method of examination, and but little alteration had followed his enforced rest, so far as the physical signs or his subjective symptoms were concerned. It seemed that as long as no tendency had been manifested on the part of nature to repair the damage, that it was probable that no union of the cartilage to the shaft was likely to take place and that it would be advisable to remove the apparently detached fragment.

Under general anaesthesia, through a short dorsal incision opening the capsule of the metatarso-phalangeal joint, this was accordingly done. When the joint was exposed, the condition shown by the radiogram was found to exist. A separation of sufficient width to admit the blade of an osteotome was present, and only a very fragile film of granulation tissue intervened between the cartilage and the end of the metatarsal. There was no comminution of the bone or of the piece of cartilage, and the latter could be lifted out of the joint easily with dressing forceps. After curretting the end of the metatarsal, a capsular suture was placed and the skin incision was closed. A voluminous dressing was applied without splinting.

Convalescence was uneventful, except that there was some leakage of synovial fluid for a week or two after the stitches were removed. Now, November 1, 1920, the foot is symptomless and the patient walks freely and painlessly as much as he chooses. There was not the slightest indication of any attempt to repair, either on the side of the shaft or that of the detached cartilage, except as one may regard the film of granulation tissue as such evidence.

*Case 2. In the early part of November, 1920, a boy of thirteen came to the office because of persistent pain in his right foot. During the preceding July, he had stumbled while running bases and had sudden sharp pain at the base of his second toe. He was taken to Nashua, where two surgeons diagnosed the case as fracture of the head of the metatarsal and placed the foot in a splint. No x-ray was taken. The splint was removed in six weeks, but the

* I am indebted to Dr. Harold C. Seaver for the history of this case and the details of his treatment of the case.

foot was too painful to allow much walking. He then had a metal splint placed in the sole of his shoe. This splint he has worn to date without any relief from symptoms. The pain is localized over the dorsum of the metatarsal head and is greatly increased by bending the second phalanx in any direction.

Examination of the region reveals no definite objective signs. There is a questionable thickening of the metatarsal head.

X-rays (Fig. II) confirmed the diagnosis of fracture. A small incision was made on the dorsum of the foot, exposing the head of the metatarsal and the adjacent joint. It was found that a line of fracture extended part way into the epiphysis and included the whole cartilage of the joint, except the inferior border. There was no callous formation and no sign of union. The whole fractured portion was removed as a foreign body, and the edges of the epiphysis were smoothed.

In two weeks the boy was walking, with scarcely any limp, and has been slowly improving since.

Fig. 2.—The marker shows a crack in the cartilage which extended in to the epiphysis and across to the great toe side, making a loose fragment of the epiphysis.

Case 3. The patient, whose history is now to be recounted, was not recognized as belonging to this group until some time after the two cases above described had been treated and Freiberg's paper had been called to my attention. It is a particularly interesting case in the light of these other patients, because it shows what happens, or may happen, as a late result of this sort of an injury.

Mrs. F. A. S. (5678), a woman of 60 years, consulted me May 28, 1920, because of an exceedingly painful sensation which she has when walking, referred to the second toe on the left foot. She has been conscious of more or less discomfort, amounting at times to pain, ever since she "stubbed" this toe three or four years ago. At the time, it hurt her a good deal. For the past eight to ten months it has been particularly aggravating, and it has been during this time that she has felt for the first time an enlargement on the inner aspect of this second toe. This was hard, and painful to pressure. She has always been an active woman, doing a good deal about the house, and she has had no arthritis, nor has she suffered from any injury other than that referred to above.

Physical Examination: Fairly developed and nourished woman. At the second metatarsophalangeal articulation the left foot is considerably thickened, apparently bony in character. This extends forward toward the great toe, on which she has a fairly high-grade hallux valgus deformity. This enlargement is noticeable on inspection, as well as upon palpation. The motion at the joint is painful and restricted mechanically by spasm to about one-half the normal extent.

The x-ray (Fig. III) shows both articular surfaces entering into the joint to be jagged and flared, giving the impression of having been squared off partly by the force causing the original stubbing of the toe and in part as a result of the injury to the cartilage on the two sides of the joint. It suggests that there may have been an impaction of the condyle of the metatarsal into the joint and against the phalangeal cartilage. The space between the bones is greater than normal and the joint surfaces which should be in apposition are not possessed of the usual contours. The phalanx tends to deviate toward the great toe to some extent.

FIG. 3.—Observe the irregularity of the adjoining ends of the second metatarsal and phalanx. The hazy shadow on the side of the second metatarso-phalangeal joint is the extruded cartilage, which had separated from the metatarsal, a later stage of the same condition shown in Figure 1.

Because of the progressive character of her symptoms and the clinical and x-ray findings, she was advised to have an operation to smooth up the articular surfaces.

She was operated upon under general anesthesia on June 3, 1920. A 3½-inch incision was made over the metatarso-phalangeal joint rather to the great toe side of the mid-line of the second metatarsal. The extensor tendons were pulled to one side and the joint opened. What appeared to be a loose piece of bone, the size of a pea, was removed from just beneath the capsule in the line of the incision.

The articular surfaces of both phalanx and metatarsal were flattened; the metatarsal side of the joint had little or no cartilage and the phalangeal side had three or four sharp spicules of bone projecting from the margin of the cartilage. It would appear that the loose piece of bone represented the rounded end of the metatarsal. These bone spicules were removed, it being necessary practically to disarticulate the phalangeal head in order to get at all the roughnesses. The capsule was closed and skin sewed with silk worm gut, after which a dressing was applied. Union was by first intention, and two weeks and two days from the operation she was permitted to put on her shoe and try to get about.

She reported at the office in the course of a month after she had returned to her home. Although she was still a little lame, she was walking very well and had very little pain.

This case appears to represent one of a group of traumatic lesions occurring usually as the result of "stubbing" the toe. For some reason, they are not as often recognized as it would seem that they should be. It is probable that because the disability is not great, they are regarded by the patients as sprains; the majority of them probably take care of themselves and only the ones where separation of the cartilage is complete, seek out the doctor for advice. Some are probably treated as anterior arch trouble or metatarsalgia, and if the treatment is kept up long enough, and the separation of cartilage is not complete, it is as good treatment as if the condition had been more accurately diagnosed.

Now that these cases have been so completely investigated, I feel sure that I have seen others of the same nature, but did not carry their study far enough to have made an accurate diagnosis.

A careful search of the literature in the *Index Medicus* has revealed no further reported cases, except by Skellern, in the *Annals of Surgery*. This was reported clinically in the Proceedings of the Philadelphia Surgical Association. He cited Freiberg's cases and states that these were the first that had been brought to his attention. Freiberg's then stand with the one above referred to, and others by Dr. Campbell of Memphis as the only recorded cases. A personal communication from Dr. Freiberg, a portion of which is quoted, indicates that there are probably more of these than is generally recognized.

"I have your letter of October 28th, and it interests me very much because every now and then I hear of experiences like yours. In 1914, I published a series which I think are akin to yours, in Surgery, Gynecology and Obstetrics,*

* August, 1914.

and I am sending to you a reprint under separate cover. Since the time of this publication, I have every now and then encountered other cases, so that I might perhaps have seen four or five additional cases. Dr. Campbell of Memphis has encountered several cases, and has made a publication on the subject.† He will doubtless send you a reprint upon request. When the A. M. A. met in New York the last time, Hibbs showed two plates of this condition as of unknown character to him, and Campbell happening to be in the audience, was able to tell him something about them."

† American Journal of Orthopedic Surgery, Vol. xv, No. 10, pp. 721-724.

THE IMPORTANCE OF THE PUBLIC HEALTH NURSE IN THE TUBERCULOSIS CAMPAIGN.

By Joseph H. Pratt, M.D., Boston.

It is estimated that there are 20,000 consumptives in Massachusetts at the present time. Many of them are dependent on the public clinics and dispensaries for advice and treatment. The diagnosis is made by the doctors, but the details of treatment are largely placed in the hands of the nurses.

Here is a great responsibility and a great opportunity. Dr. John S. Hitchcock has said that 80% of the tuberculosis work properly belongs to the nurses, and I think this estimate is not too high. In my own work among poor consumptives, in the tuberculosis class, I know that the success that has been achieved has been due chiefly to a succession of remarkably able women who have visited the patients and supervised the treatment. Every public health nurse should understand the essentials of successful treatment. Unless she knows the right way of treating the disease, how can she teach the consumptive what he must do in order to recover his health?

The rest method which we have followed for fifteen years is one that is easy to learn and easy to teach. It can be carried out satisfactorily in the home of the patient, and adequate supervision is possible with only occasional visits by the nurse. One must believe in the strict rest treatment himself before he can gain the power of convincing his patients to take it up. At this time I cannot enter into any detailed explanation of the beneficial effect of rest or what it accomplishes, but I urge every tuberculosis worker to procure Dr. Lawrason Brown's "Rules for Recovery from Tuberculosis," and read and study and inwardly digest the chapter on Rest.

There are certain features regarding the disease which a nurse must understand if she is to give wise counsel to the patient and his family. A patient in the curable stage of the malady rarely feels sick. If he accepts his feelings as his guide, he will not take up the bed rest treatment until he has in all probability reached a condition in which recovery is impossible. It is easy to effect improvement by various forms of treatment, but to check the disease permanently is difficult and is rarely accomplished unless a relatively large amount of rest is taken by the patient, and the more complete and prolonged the rest, the greater the chance of permanent recovery.

Patients may improve under forms of treatment that never lead to permanent arrest of the disease. Walshe, the English physician, writing as early as 1854, before anything was known about the effect of rest or out-of-doors life, at a time, in fact, when air artificially warmed was advocated for treatment, said that 68% of the patients whose records he had analyzed, left the Brompton Consumptives' Hospital improved or unadvanced, while 32% left in a worse state than when they entered, or died within its walls. So far as saving life was concerned, this meant little or nothing. The progress of disease was simply checked for a time.

Remember, also, that the progress of the disease is often not continuous in persons with good powers of resistance, but is interrupted with frequent halts, when the disease seems to be checked. This was recognized by Laennec, who spoke of the "false convalescence." The patient has a bad cold and some fever. In a few weeks, the cough is less and the fever gone. He is soon on the streets again and for a time he gains in weight and strength. He is almost well, he thinks; the cough has ceased to trouble him at all. Then he "catches another cold," as he puts it, and the symptoms return. After a time they may disappear again, but he is now thinner and weaker than before. This slow march to the grave is one of the causes of the dread of consumption. The disease, improperly treated, plays with its victim like a cat with a mouse.

Treatment of active pulmonary tuberculosis is never begun too soon, but often too late. If the house is on fire, only a fool would wait to see if it didn't go out of itself before sounding the alarm, and a greater fool is he who waits to see if the tubercle bacilli will not disappear from his sputum by compromise measures if he gives them time, before he makes up his mind to take the proper treatment. Poor patients often say they cannot afford to stop work and take treatment, and I am sorry to say that some physicians accept this argument as convincing when the patient's symptoms and signs, though definite, are slight, and his earning power unimpaired. The poor patient, in this condition, can less afford to delay treatment than the rich consumptive, because with the poor man, loss of pay for a single day, is a serious matter, and hence the greater the need of a speedy return to health. The longer the delay before beginning treatment, the greater is the damage to the lungs, and the longer the period of treatment, the less chance of recovery. If a man with active disease persists in working, after the diagnosis has been made, usually in a few months exhaustion compels him to stop work, because the increasing cough which robs him of sleep, the wasting of flesh, and the fever, all combine to sap his strength. *He finds too late that it would have cost less to get well than to die of pulmonary tuberculosis.*

Too few physicians appreciate yet what can be accomplished by prolonged bed rest in the open air, and too few know that it can check the disease not infrequently when the ordinary out-door treatment has failed. I have used bed rest as the basis of treatment in about 200 cases under my care during the past ten years, and the detailed records I have kept of these cases furnish conclusive evidence of its great value. Even the chronic consumptive, in whom the disease is extensive, but only slightly active, with normal or slightly elevated temperature and slow pulse, who tires quickly, coughs severely, and whose sputum contains tubercle bacilli, has a fair chance of arresting the disease and regaining his wage-earning power, if he will follow the bed rest treatment for a long period—12 to 16 months, or longer. I have several patients who finally recovered after three years of rest treatment, during which exercise was not allowed.

One of the most striking illustrations of the great value of strict rest in the chronic patient, was told to me by Dr. Edward R. Baldwin of Saranac Lake. Years ago, at a time when nothing was known of the curative power of rest, and when the rest treatment was only used when a patient had fever, or was otherwise acutely ill, there was a young man at the Trudeau Sanatorium who had reached a stationary condition. He was an advanced case, with a cavity in his lung and tubercle bacilli in his sputum. He seemed doomed to a life of semi-invalidism. One day, while out tobogganing, he broke both his legs. This turned out to be a most fortunate accident. Weeks of strict rest treatment followed, while the bones were mending. When he finally got up and about, the signs of cavity had actually disappeared and tubercle bacilli could no longer be found in the sputum. He made a good recovery. He is still well and working, and has held for many years a position of trust and importance in Saranac Lake.

If we could induce every consumptive with active disease in this country to go to bed out of doors for six or eight weeks, I am sure that the death rate from tuberculosis would show a substantial drop the very next year. Short as this period is, it is sufficiently long to permit nature to gain eventual mastery of the disease in some cases, even when the patient returns to work immediately afterwards. Intensive treatment of such short duration will, of course, be followed by arrest of the disease in only the more favorable cases; but when it does occur, it furnishes a striking demonstration of the curative power of rest.

Two years ago, Dr. Lawrason Brown and I, in a paper on "Tuberculosis as an Army Problem," reported the case of C. G., discharged from Camp Devens with tubercle bacilli in the sputum and slight signs of disease in the lungs. Two days after his return home, he began bed rest treatment in a corner room—the indoor treatment. I do not endorse it, but it seemed necessary in this case, as he lived in restricted quarters, without yard, or piazza or roof available for treatment. He was kept in bed for seven weeks, except for a weekly trip to the class meeting. Exercise in the form of short walks then began. Against advice, he left the class, and went to work two weeks later. He had gained 24 pounds in eight weeks, the tubercle bacilli had disappeared, the lungs were clear of râles, and he felt strong and

well. He has been well and working from February, 1918, until the present time. (He was well in March, 1920.)

So simple is the technique of the bed rest method that I have directed the treatment in some cases by correspondence, with an encouraging measure of success.

One of the first cases in which the correspondence method was used by us was that of Mr. L., who spoke, himself, of the rest treatment at a conference of public health nurses, held two years ago in Boston. In that case, occasional visits were made by Miss Hills, the class nurse, who gave detailed instructions to the patient and the family. The economic and medical difficulties made this case one of especial interest in view of the successful outcome.

There were many discouraging features. The patient lived about twenty miles from Boston, and the little clearing on which he and his family lived in a four-room shack, was several miles from the railroad station. There were seven children, and the oldest was nine years of age. The patient was 35 years old when he entered the class, in 1911, and he had been sick for two and a half years. He had been treated for tuberculosis at a dispensary for a year, but had gained very little. At the time we took up the case, he was much under weight. He had extensive tuberculosis of both lungs; he was raising one-half cupful of sputum a day, and tubercle bacilli were present. He had no money. He was given five dollars a week from the town in which he had previously dwelt. In various ways sufficient money was obtained to support the family. The patient's bed was in a lean-to beside the house. It was opened up to secure plenty of fresh air. He followed the bed rest treatment. Between May and October, the nurse made only five visits. It was a long, hard struggle; but eventually he recovered his wage-earning power. None of the children became tubercular.

He wrote in February, 1917, as follows: "Physical condition has been very good for past two and a half years. Have worked pretty steadily all during that time at general farming, raising all of our own produce, and mostly hand power; also building two dwelling houses, doing stone mason work for cellar as well as carpentry on one (a two-story building). This was in 1915; built second house in November and December, 1916. Sputum examination has been negative for past year and a half." He is now employed as express messenger between New York and Boston, and receives $26 a week.

I believe that correspondence classes could be formed by the State Departments of Health and that it would be the easiest and most inexpensive means of giving instruction and guidance to large numbers of tuberculous patients and an aid to the public health nurses in supervising the treatment of their patients.

No patient should be admitted unless his application for membership was endorsed by his private physician or the dispensary physician. The patient should agree to follow strictly the detailed instructions given by the nurse and by correspondence.

He should begin the rest treatment on entering the class and provide facilities, if he has the means, for taking the bed rest treatment in the open air. The details of the daily life should be entered in a record book, and reports made in writing to the doctor of the class at stated intervals.

The plan would permit of the instruction of a large number of patients at a minimum expense. It would keep the patient in contact with his doctor, the class director should insist that the patient report to his doctor at stated times, for an examination, and that the regular fee should be paid. Such a class would lighten the labor of the overworked nurse and permit of giving every intelligent, conscientious patient a chance to take the form of treatment that offers the most hope or recovery. Even if he lived in a remote village, he would get some supervision from those with experience and he would take heart from knowing that he was not fighting the battle alone and that he had guidance adapted to his special case.

CEREBRAL HEMORRHAGE OF THE NEW-BORN.

By Frederick C. Irving, M.D., Boston.

Cerebral hemorrhage is undoubtedly the most common cause of death in the first week of infancy. Warwick found it present in 50% of autopsies on the still-born and the new-born, and Spencer in 40%. In over 12,000 consecutive births at the Boston Lying-In Hospital, the

diagnosis of cerebral hemorrhage was made in 41 cases, which is about once in 300 deliveries. This figure gives no proper idea of its frequency as only those cases have been considered which were proved by autopsy or in which, during life, the signs of intracranial bleeding were unmistakable. Still-births and deaths from asphyxia, or from unexplained causes, were not included.

Of late years, our notions regarding the causes of cerebral hemorrhage have undergone considerable change. In the older textbooks, the trauma of operative delivery looms large, and in many it is the only etiological factor mentioned. We now know there are at least three ways in which cerebral hemorrhage of the new-born may originate. These are, (1) from intrauterine asphyxia, (2) as one of the many manifestations of hemorrhagic disease of the new-born, and (3) from the trauma of either operative or spontaneous delivery.

Intrauterine asphyxia results from some mechanical obstruction to the foetal circulation. It is not my purpose to take up here the many abnormalities and malpositions of the umbilical cord which may produce this effect, but to call your attention briefly to one factor which is often overlooked, namely, prolonged labor. During labor, we have a retraction of the muscle fibres of the uterine wall, which, if allowed to continue indefinitely, will result in tonic contraction of the organ. Should the membranes rupture early, this retraction is especially marked. It occurs at the placental site, as well as in the other portions of the uterus, and the result is a slow diminution of the blood supply to the foetus. Impaired oxygenation causes an asphyxia which so raises the foetal blood pressure that cerebral apoplexy is the result. Over 25% of our cases at the Lying-In Hospital had a first stage which lasted over 24 hours. Had this been shortened by appropriate measures, I believe that many of these babies would have been saved. In a number of these cases, alterations in the rate and rhythm of the foetal heart were noted. If the presenting part is allowed to remain too long on the perineum in the second stage, the same condition will result. The forceps have been blamed many times as the cause of cerebral injury, when, had they been used earlier, the injury might have been avoided.

In another 25% of our cases, cerebral hemorrhage was apparently but part and parcel of hemorrhagic disease of the new-born. In these cases, hemorrhages were found in other regions of the body beside the cranial cavity. Moreover, eleven cases of cerebral hemorrhage followed normal or precipitate delivery, and one followed Caesarean section. In none of these was the trauma of delivery or asphyxia present. We are, therefore, led to the conclusion that these cases were due to hemorrhagic disease, since the other two causative factors were lacking.

The trauma of delivery may cause rupture of the cerebral vessel with resulting extensive hemorrhage. Compression exerted by forceps applied to an unfavorable diameter of the foetal head, as well as the sudden change in intracranial pressure when either the forecoming or the aftercoming head is violently pulled through either the superior or the inferior strait, may result in much damage. I believe that the only safe application of forceps is over the sides of the baby's head. In this case, when a properly designed instrument is used and there is no disproportion between the head and the mother's pelvis, the forceps tends to protect the skull rather than to damage it. In one of our cases, a massive hemorrhage resulted from rupture of the superior longitudinal sinus caused by excessive over-riding of one of the parietal bones. The patient was a multipara in very active second stage, with the head at the vulva. While the house officer was scrubbing up, the nurse restrained the presenting part, with the result that the baby died next day. Antopsy showed a good-sized rent in the sinus.

Post mortem reveals all degrees of hemorrhage from the small punctate areas over the surface of the brain, to the massive variety which may cover one or both sides of the convexity of the cerebrum or may be localized in the subtentorial region. Often it is difficult to find sufficient cause of death, as was the case in one infant where nothing was made out but a small clot in each lateral ventricle. On the other hand, the hemorrhage may be so extensive that it is remarkable that the baby lived at all.

In the cases associated with hemorrhagic disease, we find, in addition, hemorrhages in many parts of the body; the gastroenteric tract, the cortex of the suprarenal capsules, the kidneys, of bleeding from the navel, from forceps and the subcutaneous tissue, hemothorax, heraoperi-

operation wounds—notably circumcision—and even from needle pricks.

The diagnosis of cerebral hemorrhage of the new-born is a matter of the greatest importance. The immediate mortality is excessively high, in our series 95%, both with and without operation. Since these children, should they survive the first few days of life, are very apt to become the victims of cerebral paralyses or degenerate into hopeless idiots, it is absolutely necessary that the condition should be recognized immediately and every attempt made to prevent such a disastrous outcome. These babies, in the early hours or days of life, exhibit certain peculiarities which should not fail to attract the attention of the physician. They may have recurrent attacks of cyanosis and apnoea, often without any other visible abnormality. As was pointed out some years ago, by Dr. R. M. Green, this is especially apt to be the case in the subtentorial hemorrhage, where the extravasated blood causes an increase of pressure on the medulla and results in respiratory symptoms. In these cases, lumbar puncture will reveal bloody spinal fluid, and often the condition of the child will improve strikingly, for a time at least, upon the relief of pressure by this procedure. One of our cases was, so far as we know, cured by repeated lumbar punctures. It left the hospital in good condition and was normal in every way four months later.

In other cases, there is little to be noted at first, except that the child does not seem quite right. It refuses to nurse and often has a characteristic, continuous and monotonous cry. Sometimes, on the contrary, it lies quietly and is difficult to arouse. As time goes on, mystagmus, inequality of the pupils, twitching, convulsions and spasticity of the extremities develop, and there may be retraction of the neck or opisthotonous. The anterior fontanelle is apt to show a varying degree of bulging, depending upon the degree of intraeranial pressure. In massive hemorrhages, pallor is a striking sign. Oedema of the face rarely occurred in our series. There may be protrusion of one eyeball, or both. The temperature may be markedly elevated, or it may be subnormal, or show no change whatever. The heart-beat is usually slow and forceful.

If there is any question of intraeranial hemorrhage, a lumbar puncture should be done. The anterior fontanelle may also be aspirated with a needle and syringe, avoiding the midline under which lies the superior longitudinal sinus. Naturally this procedure will be negative unless the extravasated blood lies beneath. The coagulation and bleeding time should be determined by Rhodda's method, and if they are prolonged, or if hemorrhages are apparent in other regions of the body, repeated subcutaneous injections of about 30 cc. of whole blood should be made on the assumption that the intercranial bleeding may be due to hemorrhagic disease. In our experience, transfusion has only hastened the fatal termination, since the rise in blood pressure which results from it has only increased the hemorrhage. Should the diagnosis of intraeranial hemorrhage be made, a surgeon skilled in the treatment of cerebral injuries should be called immediately in consultation. Our cases which have been operated on have done very badly. In all of them, except one, either an extensive bone flap operation was done or the anterior fontanelle was opened. Should these infants survive the operation, which is rare, hydrocephalus or hernia cerebri is very apt to result. In one case, the coronal suture on one side was opened for a few centimeters and a rubber tissue drain inserted. This infant left the hospital apparently well, but was lost tract of. The operation which seems to offer the most hope is the subtemporal decompression. The surgeon's effort should be solely to relieve tension. Search for bleeding points, except when there has been a tear in a single large vessel, such as the superior longitudinal sinus, will be fruitless and a waste of valuable time.

In this condition prophylaxis is all important. The foetal heart should be under close observation during the entire first and second stages, and the obstetrician should stand ready to terminate labor, should it show any alarming variation. Since a number of our cases occurred when the first stage lasted over 24 hours, we have come to view inertia, or lack of progress, with apprehension, and often hasten dilatation by means of the Voorhees bag or by partial manual dilatation under light anesthesia. In none of our cases of cerebral hemorrhage had pituitrin been used. This drug has been employed very little at the Lying-In Hospital and never in larger than three minim doses. Although cerebral injury following its use has been reported from other clinics, it is only fair to say that they have followed larger

doses injudiciously used. We have had no bad results following its use in small doses, when the presenting part has been well in the pelvis and dilatation well under way. In the second stage, we do not allow the head to remain on the perineum for over an hour. At the expiration of this time forceps are applied and the infant extracted. We do not believe that we are subjecting the child to any risk from this procedure, but that, on the other hand, we are taking all possible measures to protect it from injury.

THE ESSENTIAL FACTORS OF CANCER CAUSATION.

BY JAMES W. SHANNON, M.B., SAN DIEGO, CALIF.

(Continued from page 512.)

There are certain large areas in this country which, because of the contrasts in their physical features, and also because of the size and uniformity of the populations which they include, are, perhaps, better calculated to exhibit the relation of water to cancer than other parts of the civilized world. They are as follows:

1. *The New England Region.* This comprises the states of New England, together with the state of New York. The most prominent feature of the landscape is the *extraordinary number of lakes,* mostly of small or medium size, which are distributed throughout the greater part of this region with considerable regularity. Altogether these states (excluding New York) cover an area of 66,424 square miles, of which 4,448 square miles, or approximately one-fifteenth part, consist of water. By reason of such enormous quantities of *stagnant water,* the conditions throughout this region are favorable in the highest degree for *the development of protozoal organisms in maximum numbers.*

2. *The Mississippi Valley Region.* In this are included states lying between the Appalachian range of mountains in the east and the Rocky Mountains in the west. Its characteristic features are *level prairie lands of vast extent,* and a *system of great rivers, all of which with their numerous tributaries tend to flow sluggishly.* These conditions correspond to a *development of protozoal organisms in moderate numbers only.*

3. *The Rocky Mountain Region.* This includes states situated on the slopes or plateaus of the Rocky Mountain range or the extensions thereof. The great height of the mountains, and the fact that at the summit they are covered with snow during the whole or greater part of the year, implies not only *rapidly flowing streams and rivers,* but also *abundant supplies of water of the highest purity.* Under the conditions present in this region *protozoal organisms tend to develop only in mimimum numbers.*

4. *The Appalachian Region.* This comprises states which throughout the whole or any great part are traversed by the Appalachian range of mountains or its extensions. With regard to water and the development of protozoal organisms the conditions herein are similar in all essential points to those in the Rocky Mountain region.

Having thus gained a general idea of the character of the water-supplies to which populations are exposed in each of these regions, we are in a position to determine whether or not the prevalence of cancer corresponds with the development of protozoal organisms in each of the aforementioned classes of water. For this purpose, the facts contained in the *Mortality Reports of the United States Bureau of the Census* are sufficient. The figures hereinbelow are from the most recent report available, namely, that for the year 1917. They represent the mortality rates of cancer in each state of the U. S. Registration area, and for convenience are arranged in order of cancer mortality and in groups, as follows:

MORTALITY RATES PER 100,000 OF POPULATION FROM MALIGNANT TUMORS IN EACH STATE OF THE U. S. REGISTRATION AREA DURING THE YEAR 1917.

		MORTALITY RATE PER 100,000
	U. S. Registration Area	*81.6*
1	Massachusetts	108.3
	Vermont	107.7
	Maine	105.9
	New Hampshire	105.3
	(California)	(105.1)
	Connecticut	95.7
	Rhode Island	95.4
	New York	93.6
2	Ohio	91.8
	Maryland	90.0
	Indiana	89.8
	Michigan	89.0
	New Jersey	83.9
	Minnesota	83.7
	Wisconsin	83.5
	Pennsylvania	78.9
	Missouri	73.9
	Kansas	67.9

3	Colorado	63.1
	Montana	58.8
	Washington	58.6
	Utah	53.4
4	Kentucky	53.8
	Virginia	53.3
	Tennessee	46.6
	North Carolina	43.0
	South Carolina	36.8

Perhaps the most impressive feature in this table is the manner in which the states, when arranged in order of their cancer rates, form groups which, as far as is possible, are geographically correct. Thus, the states in the first group (with the exception of California) all lie in the northeastern section of the country; those in the second, in the middle section; those in the third are all western states, while the states of the fourth group are all in the southeast. Lest it should be thought that this is merely a matter of chance, and is therefore without significance, it may be well to realize that the records of cancer mortality show that though the position of states may vary within a group, yet the groups themselves are each year substantially the same. It has never happened, for example, that any state belonging to the higher groups has appeared in the lower groups, or *vice versa*. The only instance of overlapping occurs exactly where it might have been expected, namely, between the states of those groups which in common are associated with the same physiographical characters, *i.e.*, between the lowest member of the third group and the highest member of the fourth (Utah and Kentucky, respectively), both of which groups have one prominent feature in common, namely, mountains of great height.

The high cancer rate of California is due less to the physical features of the country than to the fact that an unusually large proportion of its population lives in the cities, and also that, because of the scanty and uncertain rainfall throughout a large part of the state, it is necessary, in order to provide against a failure of the supplies, to store water in quantities sufficient for the needs of the population during long periods of time. Thus it happens that, whereas the populations of the other states in the first group are exposed to water which, by reason of the conditions natural to that part of the country, is stagnant, the population of California is exposed to water which, because of artificially created conditions, is also stagnant. Hence there is a peculiar significance in the fact that though, with respect to its physiography or geographical situation, there is nothing in common between California and the other states in the first group, yet it serves, equally with them, to demonstrate the association of stagnant water with a high cancer rate.

The value of the foregoing figures consists partly in the precise information concerning the distribution of cancer which they supply, but, above all, in the manner in which they serve to establish the relation of cancer to the the physical features and the character of the water-supplies in each part of the country. To realize this, it is necessary to remember that, in a previous paragraph, certain large areas were distinguished as: (1) The New England Region, (2) The Mississippi Valley Region, (3) The Rocky Mountain Region, and (4) The Appalachian Region; that the first was characterized by a large number of lakes; the second by sluggish rivers; and the third and fourth by rapidly flowing rivers or mountain streams. If now we study the facts of cancer distribution as they are represented in the foregoing table, we shall find that, with the exception of California, all the states *when arranged in order of cancer prevalence, form groups which are practically identical with the grouping of the same states when classified according to their physical characters.* Thus, the first group in the table corresponds to the New England Region; the second, to the Mississippi Valley Region; and the third and fourth, to the Rocky Mountain and Appalachian regions, respectively. Having regard, then, to the fact that the number of protozoal organisms present in the water supplies varies in accordance with the physical features of each region, it follows, that since the prevalence of cancer corresponds with the physical features of a country, it must, in an equal degree, also correspond with the class of water present therein. Hence the first group of states corresponds with that class of water which contains the maximum number of protozoal organisms, *i.e.*, stagnant water; the second, with that class which contains medium numbers, *i.e.*, sluggishly moving or semi-stagnant water; and the third and fourth, with the class containing minimum numbers, *i.e.*, rapidly flowing water. Since, then, the evidence pertaining to the distribution of cancer in the United States points only in the direction of an association or connection between each degree of cancer prevalence and

a corresponding class of water and number of protozoal organisms, we cannot reasonably refuse to accept the conclusion that water and protozoal organisms are essential to the causation of the disease.

Of not less importance, with respect to its bearing on the problem of cancer causation is the fact that the prevalence of the disease varies according to latitude and temperature. Figures compiled and published by Dr. Frederick L. Hoffman, in a work entitled, "The Mortality from Cancer Throughout the World," show that with increasing distances north or south of the equator the rate of cancer mortality becomes regularly higher. Dr. Hoffman's statistics are in part as follows:

Mortality from Cancer in Cities, According to Latitude and Temperature, 1908-1912.

No. of Cities	Degrees of Latitude	Mean Annual Temperature	Rate per 100,000 Pop.
35	60 N.–50 N.	48.0°	105.7
48	50 N.–40 N.	50.3°	92.4
24	40 N.–30 N.	58.5°	78.1
7	30 N.–10 N.	72.5°	42.3
4	10 N.–10 S.	74.6°	40.9
7	10 S.–30 S.	65.9°	37.7
5	30 S.–40 S.	62.7°	89.8
130			91.0

Since it is obviously impossible that the connection, shown in this table, between cancer and latitude, could exist except through the action of temperature, it is sufficient for the present to confine our attention to a study of the relation of temperature to the distribution of cancer. Inasmuch, then, as the figures show that cancer prevails in a maximum degree in temperate and cold climates, and in a mimimum degree in tropical regions, we are warranted in concluding that high temperatures exert an inhibitory or restraining influence upon the causation of the disease. It is therefore necessary to study the problem from the viewpoint of the action of temperature upon water and the organisms contained therein.

We have already had occasion to observe that among the conditions which favor the development of protozoal organisms exposure to sunlight is one of the most important. Other things being equal, maximum exposure to sunlight implies a maximum development of protozoal organisms, and consequently, we should expect to find that their numbers were greater in tropical waters than in the waters of colder climates. Observation has shown, however, that exactly the reverse is true; that the density of organic life reaches its maximum in the waters of cold climates and its minimum in the warm waters of tropical regions. This is explained by the fact that increase of temperature lowers the viscosity of water, and that protozoal organisms cannot thrive except at the surface. Being unable to maintain themselves at the surface in waters of low viscosity, their numbers must therefore tend to become fewer as the temperature of the water increased. In dealing with this point, Professor G. C. Whipple, in his work, "The Microscopy of Drinking Water," states: "The viscosity of water has an important influence upon microscopic organisms, as it materially affects their flotation It also affects the sedimentation of fine particles in water and even the circulation of the water itself. Viscosity varies with the temperature. It is twice as great near the freezing-point as at ordinary summer temperatures."

Since it is thus apparent that increase of temperature results in lowered viscosity of water, diminution in the numbers of protozoal organisms, and inhibition of the prevalence of cancer, it is obvious that the relations between water, protozoal organisms, and cancer, must be direct, and that all three vary inversely with temperature. In the light of this, the foregoing figures can only be interpreted to mean that in all latitudes the prevalence of cancer corresponds with the numbers of protozoal organisms; hence their significance in regard to the rôle of water and protozoal organisms in the causation of cancer has the value of independent proof.

Another of the problems of cancer causation is that which deals with the relations of protozoal organisms to pathogenic bacteria in water, and also with the relations of cancer to certain water-borne diseases, especially to typhoid fever. Although it is generally agreed that typhoid fever (*i.e.*, water-borne cases) prevails in proportion to the numbers of typhoid bacilli present in the water supplies, yet it is by no means necessarily true that the prevalence of typhoid fever always corresponds with water supplies in which the opportunities for contamination are the greatest. The truth is that, as in the case of protozoal organisms, typhoid bacilli naturally tend to disappear from certain classes of water and to multiply in others; but, whereas the maximum numbers of protozoal organisms are associated with stag-

nant waters exposed to sunlight, and the minimum numbers with ground waters protected from sunlight, the maximum number of typhoid bacilli correspond with waters of the latter, and the minimum numbers with waters of the former class. Protozoal organisms thrive in sunlight while typhoid bacilli tend to disappear, but, in addition to the antagonism thus determined, there is also an antagonism resulting from the natural propensity of protozoal organisms to prey upon typhoid bacilli and other bacteria in water. In discussing this, Professor Whipple, in the work aforementioned, says: "More recent experiments by Emmerich have indicated that certain Protozoa exercise a similar purifying effect on surface waters. He has found that two species of the genus Bodo will greatly reduce the number of typhoid-fever germs in water. Staining of the organisms shows that the bacteria are absorbed by the animal-cell, the action being analogous to that of the white-blood corpuscles in the human body upon which Metchnikoff's theory of phagocytosis was based. Emmerich considers that these and other Protozoa play an important part in the self-purification of streams. . . . . Strohmeyer, at Hamburg, made some interesting laboratory experiments showing how growing Enteromorpha influenced the number of bacteria of the water placed in direct sunlight and in diffused light. Thus in diffused light he obtained the following results:

Date	Time	No. of Bacteria per c.c. Enteromorpha Present	Enteromorpha Absent
July 4	11.30 A.M.	145	108
" 4	2.00 P.M.	160	144
" 4	6.00 P.M.	152	243
" 5	8.30 A.M.	1,100	5,900
" 5	2.00 P.M.	180	26,000
" 5	6.30 P.M.	7	50,000
" 6	9.00 A.M.	24	63,000
" 6	7.30 P.M.	0	80,000

The conditions which give rise to such antagonisms between different species of organisms must, in the case of those which are pathogenic, be reflected upon the diseases corresponding therewith. Consequently, if protozoal organisms are the cause of cancer, and typhoid bacilli of typhoid fever, we may expect to find the same antagonism between cancer and typhoid fever as that which has been shown to exist between their respective causes. In a general way there is evidence of such an antagonism in the fact that the marked decline in the prevalence of typhoid fever since the beginning of the present century has been regularly accompanied by an equally marked increase in the prevalence of cancer; and also in the fact that, whereas in cities—the water supplies of which are generally favorable to the development of protozoal organisms and unfavorable to typhoid bacilli—the rate of cancer incidence is found at the maximum, and of typhoid fever incidence at the minimum, in rural communities—which for the most part are supplied from wells, springs, streams, and other natural sources favorable to typhoid bacilli and unfavorable to protozoal organisms—exactly the opposite is true: that is to say, the rate of cancer incidence is found at the lowest, and of typhoid fever incidence at the highest point. Though these facts possess a significance which cannot be ignored, yet it is only by a study of the statistics pertaining to cancer and typhoid fever that the antagonistic character of the relation between them is fully revealed. Such a study is possible wherever reliable statistical data covering large areas of population are available. The figures hereinbelow are taken from the *Eighteenth Annual Report of the U. S. Bureau of the Census:* they show that the mortality rates of cancer and typhoid fever throughout the U. S. registration area during the year 1917 were as follows:

Mortality Rates per 100,000 of Population in the States of the U. S. Registration Area during the Year 1917. Arranged in Order of Cancer Mortality.

Name of State	Cancer	Typhoid Fever
U. S. Registration Area	*81.6*	*13.4*
Massachusetts	108.3	4.8
Vermont	107.7	6.9
Maine	105.9	10.5
New Hampshire	105.3	6.1
California	105.1	7.2
Connecticut	95.7	9.3
Rhode Island	95.4	5.4
New York	93.6	5.6
Ohio	91.8	13.3
Maryland	90.0	18.6
Indiana	89.8	17.5
Michigan	89.0	12.6
New Jersey	83.9	6.7
Minnesota	83.7	4.3
Wisconsin	83.5	5.2
Pennsylvania	78.9	10.4
Missouri	73.9	20.4
Kansas	67.9	17.7
Colorado	63.1	9.4
Montana	58.8	16.7
Washington	58.6	7.6
Kentucky	53.8	34.9
Utah	53.4	13.3
Virginia	53.3	21.1
Tennessee	46.6	38.2
North Carolina	43.0	29.9
South Carolina	36.8	31.8

Were it not that these figures include cases of typhoid fever having their origin in infected media other than water, it is practically certain that the character of the relation between cancer and typhoid fever would appear to even greater advantage. Notwithstanding this, the table shows that the antagonism between cancer and typhoid fever which we had reason to expect is an actual fact. Having regard, then, to the relation between protozoal organisms and typhoid bacilli on the one hand, and to this relation of cancer to typhoid fever on the other, it becomes virtually certain that the antagonism between cancer and typhoid fever corresponds with, and is a reflection from, the antagonism existing between protozoal organisms and typhoid bacilli. Hence it follows that the position of cancer with respect to protozoal organisms is the same as that of typhoid fever towards typhoid bacilli, and inasmuch as it is an established fact that the relation of typhoid bacilli to typhoid fever is one of cause and effect, we must, for the above-mentioned reasons, believe that the relation between protozoal organisms and cancer is one of cause and effect also.

For the purpose of the cancer problem, it is unnecessary to discuss further the reasons for the decline of typhoid fever prevalence, but inasmuch as the foregoing conclusions conflict to some extent with the opinions prevailing at the present time, it seems desirable to point out that, in view of the relations between protozoal organisms and typhoid bacilli and also between cancer and typhoid fever, no explanation of the decline in typhoid fever prevalence can be regarded as entirely satisfactory which does not at the same time account for the increased prevalence of cancer. Though it is not disputed that the measures designed to render water-supplies free from typhoid bacilli have contributed to the decline of typhoid fever prevalence, yet, it should not be forgotten that protozoal organisms are a powerful agency acting in the same direction. In estimating the value of measures designed for the prevention of typhoid fever, it is necessary, therefore, to realize, firstly, that all water-supplies are not equally liable to contamination with typhoid bacilli, and, secondly, that the conditions in all are not equally favorable to the development of protozoal organisms. Preventive measures will, therefore, appear to advantage in cases in which either the opportunities for contamination with typhoid bacilli are few or the conditions for the growth of protozoal organisms are favorable, and at a disadvantage under circumstances the opposite of these. An excessive degree of contamination, or a scarcity of protozoal organisms may therefore render the most efficient measures of prevention apparently of no effect, while, under the reverse conditions, the same, or even inferior, measures may appear to be highly successful. Consequently, a low rate of typhoid fever prevalence does not necessarily imply that the measures of prevention used were superior to those employed in cases of high typhoid fever prevalence. The rate of typhoid fever mortality per 100,000 population, for the year 1917, in Boston, Mass., for example, was 3.0, while the corresponding rate for Memphis, Tenn., was 25.0, and from the viewpoint of these figures only, it would therefore appear that the system of typhoid fever prevention used in Boston was more efficient than that employed in Memphis. The matter assumes a different aspect, however, when it is realized that, whereas the water-supplies of Boston are drawn from the impounded waters of large reservoirs and are therefore likely to contain large numbers of protozoal organisms and correspondingly few typhoid bacilli, the source of supply at Memphis is the famous system of artesian wells in which, by reason of the relative absence of protozoal organisms, there is comparatively little restraint upon the multiplication of typhoid bacilli. The truth, therefore, seems to be that the low rate of typhoid fever prevalence in Boston is due partly to the employment of measures designed to prevent contamination, and partly to the restraining influence of protozoal organisms, and that the responsibility for the high rate of typhoid fever prevalence in Memphis rests, not upon the absence of efficient measures of prevention, but upon the relative absence of the check which protozoal organisms exert upon the growth of typhoid bacilli. This view of the matter is fortified by the fact that for the period aforementioned the rates for cancer mortality in Boston and Memphis were 120.5 and 75.7, respectively.

There is no question so serious, or which, by reason of the loss of life which it entails, more urgently demands attention than the progressive increase of cancer prevalence. During the period 1900-1917, the mortality rate of cancer in the U. S. registration area rose from 63.0

to 81.6—an increase of approximately one-third. In other words, there were, in the year 1917 four deaths due to cancer for every three from the same cause at the beginning of this century. This tendency on the part of cancer to increase exists in practically all civilized countries, but it has not been observed among peoples living under primitive or uncivilized conditions; hence we may surmise that it is a result of influences peculiar to a civilized state of existence.

In attempting to understand the reasons for the progressive increase of cancer prevalence, it is necessary to realize, firstly, that the rate of cancer incidence is always higher upon urban than upon rural populations, and, secondly, that whereas, with few exceptions, urban populations are exposed to one class of water only, namely, the stagnant waters of reservoirs, rural populations draw their supplies from wells, springs, lakes, rivers, streams, and other natural sources. Having regard, therefore, to what has already been said concerning the relation of stagnant water to the prevalence of cancer, it is obvious that so long as the water-supplies of urban and rural populations remain as they are at present, the rate of cancer incidence upon the former must be higher than upon the latter, and for the same reason cancer must prevail in a higher degree among civilized, than among primitive people.

From the foregoing, it follows that the prevalence of cancer must tend to increase as the urban population becomes greater and the rural population less, or to decrease according as the urban population becomes less and the rural population becomes greater. Consequently, it is a matter of great importance that, whereas formerly the rural population was greater than the urban, exactly the opposite is true at the present time. The census of 1920 shows that the population of the United States consists of 105,683,108 persons, and that, of this number, 54,816,209, or 51.9 per cent., live in cities. In discussing the changes which have taken place in the character of the population, the Director of the U. S. Census Bureau says: "The figures of the present census also show that the trend of population from the country to the city has become greatly accentuated since 1910 and that for the first time in the country's history more than half the entire population is now living in urban territory as defined by the census bureau. That is to say, of the 105,683,108 persons enumerated in the fourteenth census, preliminary tabulations show that 54,816,209, or 51.9 per cent., are living in incorporated places of 2500 inhabitants or more, and that 50,866,899, or 48.1 per cent., in rural territory. In the census of 1910, the corresponding percentages were 46.3 and 53.7, respectively, showing a loss of 5.6 per cent. in the proportion of the population living in rural territory.

"To show more clearly the change in the proportion of the population living in rural territory now, as compared with ten years ago, the rural population can be divided into two classes, namely, 9,864,196, or 9.3 per cent., of the total population living in incorporated places of less than 2500 inhabitants and 41,002,703, or 38.8 per cent., of the total population living in what may be called purely country districts. At the census of 1910, the population living in incorporated places of less than 2500 inhabitants formed 8.8 per cent., while the population living in purely country districts formed 44.8 per cent. of the total population."

Since any increase in the proportion of population living in cities necessarily implies the exposure of larger numbers of persons to the class of water which, beyond all others, is most potent in the causation of cancer, it is virtually certain that so long as the urban population continues to increase at the expense of the rural, and the present habits and customs with respect to the use of water remain unchanged, the menace of cancer will become more and more serious.

Though, as a general rule, the rate of cancer prevalence must always be lower in rural than in urban populations, yet, by reason of the intercourse between them, the risks to which the latter are exposed cannot fail to be reflected to some extent upon the former. The course of travel is towards cities rather than in the opposite direction, and in so far as motor vehicles, railways, and other travelling facilities have tended to a greater exposure of the rural population to city water-supplies they have to that extent been instrumental in increasing the rural rate of cancer prevalence.

It has already been stated that a preëxisting lesion is an essential factor in the causation of cancer and also that the site of every cancer is determined by such a lesion. Inasmuch, however, as cancer does not necessarily appear

most frequently in those organs or parts of the body which are most frequently the seat of lesions, but shows a disposition to attack certain limited areas in a manner which is disproportionate to their size or importance, it becomes a problem to determine why lesions in general, and lesions of these parts in particular, should depart from their regular course in order to become cancerous.

(To be continued.)

Selected Article.

PUBLIC HEALTH CONSIDERATIONS RELATING TO INFLUENZA, PNEUMONIA, AND ALLIED EPIDEMICS.—THE EPIDEMIOLOGICAL POINT OF VIEW.*

By F. G. Crookshank, M.D., F.R.C.P., London,

Physician to the French Hospital and St. Mark's Hospital, London.

Although I have had the advantage, in the past, of working for some years as a medical officer of health, I propose now to approach the topic chiefly from the point of view of a clinician who is interested in epidemiology and the historical records of pestilence.

We speak a great deal nowadays concerning influenza. We are all deeply interested in its control: we all realize its devastations: but how many of us are prepared to say what we mean by "influenza"?

Yet, unless we have clear ideas as to what we mean, how can we hope to formulate rational schemes for the mitigation of its ravages?

I have recently attempted elsewhere to elucidate our conceptions of epidemic disease at greater length and in more technical language than would be here possible or suitable; but I would point out that we have come, through sheer intellectual laziness, to speak as if special diseases were objects of natural history, like lions and tigers, that ought to be destroyed, but that still make onslaughts upon us, from time to time, without other justification than their inherent wickedness and hatred of mankind. We have come, moreover, to look upon the causal bacillus, known or unknown, as the material expression of the disease; and we seem to imagine that the disease exists, in perpetuity, hidden in Siberia or elsewhere, whence it emerges from time to time to wreak havoc amongst the peoples of Europe and America.

All this is very wrong and very careless, for special diseases exist only as general notions, or conceptions, which we form concerning definite types of disordered health, in respect of which certain causes play a definite part. To speak then of the recurrent epidemics we call influenza as repeated invasions of the same disease can only be true in the limited sense that the war lately concluded was the same war as that of 1870; or the recent fighting in Derry the same rioting as that of 1688. In each case certain like, or even identical causes were partly responsible for the disturbances produced in particular localities, but that is all.

The facts are that, just as the populations of continents or of countries are from time to time agitated by the organized disorder of social and political life that we call war, so these are also, from time to time, sufferers from those disorders of the life of communities that we call epidemics, or pestilences.

And, just as from critical or analytical motives we classify the *kinds* of war we observe, as civil war, war of rebellion, war of empire and the like, so do we speak of certain kinds of disorder of the public health as plague, cholera, and influenza.

But, just as war, revolution, and riot, do not exist in nature as things, so there is nothing with external existence or objectivity which makes its appearance from time to time and to which we can apply the term influenza.

It is idle, therefore, to discuss whether or no the influenza of 1918-19 was the same thing as the influenza of 1889-90. The phenomena are comparable, but there are differences, as well as resemblances, in form, as well as in causation.

Now the bacteriologists are not more free from blame than are the physicians. They, finding certain bacilli to be generally the immediate agents in particular *cases* during an epidemic, declare these bacilli to be the cause of the *epidemic;* a position as illogical as to declare that bullets and poison gases were the cause, not merely of deaths during the late war, but of the war itself. The bacteriologists evidently forget the complexity of causation, and forget, too, that, however important from the point of view of the pathologist may be the exact nature of this or that bacillus in this or that form of disease, the real problem before

* Excerpt from Vol. xli, No. 2 (1920), of the Journal of the Royal Sanitary Institute. Also published in The Military Surgeon for February, 1921.

the epidemiologist is to make out the nature of the factors that favor the propagation and dissemination of these special microörganisms at periodic intervals.

We, then, who are concerned to prevent, if possible, the vast epidemics that we call influenza, amongst others, must study the ultimate causes of these periodical disorders of the health of communities, just as the intelligent statesman, who would prevent war, should be less occupied with problems of artillery than with the causes that lead to conflicts.

The point of view of the epidemiologist differs from that of the statesman, from that of the soldier. The physician and the soldier occupy themselves, during epidemics and wars, with counter attack, and the protection of individuals and lesser units of communal organization: the epidemiologist and the statesman must take a wide view in their respective spheres of interest, and must deal with origins.

Our business, then, is to enquire why pestilences occur: to seek a way, if way there be, of foretelling their imminence; and to consider how far they may be prevented or modified by the means at our command.

The inoculation, for example, of individuals during an epidemic, and the adoption of measures to limit contagion, are undoubtedly valuable; but they can no more *prevent* a pandemic of influenza than can gas masks and steel helmets *prevent* a war.

But, if the historic and epidemiologic methods of enquiry be pursued, even though they involve mental exercises abhorrent to the laboratory worker, we may hope to arrive more clearly at a true comprehension of the influenza problem than if we confine ourselves to purely pathological investigation of individual casualties.

It is to some results of the application of the historic and epidemiologic methods that I now propose to invite your brief attention.

What *is* influenza? The pathologists cannot tell us.

From time to time (indeed, almost every year) we meet with *cases* that are diagnosed, without difficulty, as influenza; and in some years we meet with so many cases of this fairly easily recognized form of illness, that we say "a good deal of influenza is about." These minor prevalences are apparently associated with climatic and seasonal variations, as well as with other factors.

But, at longer intervals (roughly so periodic as to occur once in a generation) there is what is called a "pandemic of influenza." All parts of the world, not simultaneously, but in rapid succession, manifest disorders of health roughly comparable to what is seen almost every year amongst persons and smaller communities, though generally more severe in form. These "pandemics of influenza," as they are called, are not mere numerical aggregations of cases of seasonal influenza. So, though in battles there are certainly hand-to-hand combats, and group fights, a battle is something more than a number of combats and fights occurring simultaneously. It is a series of coördinated happenings, not merely referable to the prowess of individual combatants, or the conditions in which they find themselves, but set in motion by such controlling forces as an elderly General ten miles away, himself energized by still more distant springs of action, in London or Berlin.

A pandemic of influenza appears also to be a coördinated series of happenings, in which individuals and particular sets of circumstances play their part, no doubt, but still, one ultimately caused by forces or agencies widely affecting the whole set of conditions of life upon this planet.

Why is it that at such irregular but definite intervals as to be almost predictable (like the return of a comet) by mathematical calculation, there should be such a repetition of similar and widespread disorders of health if there be not, in the background, some general factor, telluric or cosmic, involving periodic variation in the conditions of all forms of life, human, animal, vegetable and even microbic?

We know that during pandemics of influenza not only are animals affected as were, in 1918, the reindeer in Labrador and the baboons in South Africa, but that even the characters of the microbic colonists of our bodies are altered, as indeed, on the bacteriological hypothesis of epidemics, they must be.

How else can we explain the "exaltation of virulence" of the microbes which is alleged in explanation of the increase in the number of cases of bacterial infection which, to the bacteriologist, constitutes an epidemic of influenza?

But there is another point. Although the waves of disordered health that we call influenza on the grand scale so resemble each other in their broad outlines that we ascribe them to

the "same disease," yet they are not invariably precisely similar in the eyes of the clinical observer.

In great pandemics, "the disease," as we say, seems sometimes (as in the autumn of 1918) to be mainly pneumonic; on other occasions it is notably nervous, as in 1712, and in 1801; on others, as in the 1840's, it is gastrointestinal, or, as in the summer of 1918, it may be relatively trivial and rheumaticky, or boneaching and agueish in type.

But, in each great pandemic, whatever its predominating character, there are local foci; and in each focus there are *cases* which are either respiratory, nervous, gastrointestinal, or agueish, and others which partake of all these characters in mild degree and that we call typical or simple.

Now experience, and history (which is only recorded experience), alike teach us that, though, as in 1918 and 1919, the chief and typical wave may be succeeded by a secondary, or even a tertiary wave, usually more special in character, nevertheless the great waves usually last, in each district affected, about six weeks from initial rise to final fall.

Moreover, for five hundred years at least, the first great wave of pandemic influenza during what I will call an influenza period (and there have been perhaps fifteen such), has been recorded as having taken the world by surprise, as if in a moment of forgetfulness: has been called a new disease somewhere, and has been given a new name by someone!

I well remember both the alarm and the facetiousness in 1889; they were reproduced in 1918, and will be again before 1950, while, I doubt not, a year or two later, at some Sanitary Congress in Siberia or Patagonia, someone will say much what I am now saying.

For what I say now is not new, and has been said every twenty or thirty years by someone since the days of the Sweating Sickness.

Historical investigation has clearly shown that what I have already hinted is a fact; that the great pandemics of influenza are not isolated phenomena, but are each a part of a series of organized disturbances of health spread over what I call an influenza period (a period during which there obtains what Hippocrates, Ballonius and Sydenham would have called a special "epidemic constitution") a period lasting, roughly, for the whole world, some five years or so. These influenza periods, though resembling each other as do the influenza epidemics and cases, yet differ as do *they* among themselves.

But the *central* waves of influenza during these special periods stand in organic relation to the other epidemiological events of the period, just as does the battle of the Somme in 1916 to the murders at Sarajevo in 1914, and to what is now happening in Syria.

Just as wars occur during periods of historic, political, and economic importance, so do pestilences, such as that of November, 1918, occur during epidemiological epochs. We find, moreover, that, just as wars and revolutions occur in relation to local wars, Continental disturbances, periods of aggrandizement, and the like, so do these great waves of pestilence occur *after* a period, during which there are scattered local outbreaks of intensive forms of disease, sometimes pneumonic or respiratory, sometimes nervous, sometimes gastrointestinal, and sometimes dengue-like or agueish.

Then, after the great waves, comes a period of retrogression, when we reap, as it were, the aftermath; when there are again here and there scattered peculiar and intensive outbreaks of disease. Finally interest flags, memory becomes faint, and influenza is forgotten save as a kind of severe cold that happens in the winter. Mention of it and its problems disappears from the text-books; it is remembered only by the curious.

It seems clear that, if we will only profit by experience, and keep the memory of these happenings fresh, we shall be able to forecast the coming storm when first appears on the horizon a cloud no bigger than a man's hand: that is to say, when these peculiar forms of epidemic disease that I have mentioned first make their appearance here and there.

The curious thing is that these premonitory and intensive outbreaks, or outbreaks of intense and peculiar forms of disease, should be so seldom recognized for what, with Dr. Hamer, I believe they are, namely, outbreaks which, though of a specialized type, are yet not to be distinguished by any specific character from what we call true influenza.

Indeed, *during* the recognized pandemics cases, of a nature indistinguishable from those seen in these peculiar outbreaks, are generally recognized as influenza!

But, when occurring lumped together, as it were, or in bulk, they are almost always at first thought to mean a new disease, and, more curi-

ously still, are very frequently ascribed to forms of food poisoning.

It was so in the Middle Ages, when the Germans ascribed such outbreaks to eating salt fish, sour apples and the like; it was so in the sixteenth, seventeenth and eighteenth centuries, when epidemics similar to our present sleeping sickness were confused with ergotism; it was so in the last century, when at Paris, in 1829, the herald of influenza of 1830 was a new disease called aerodynia, that baffled everyone, but was confidently put down to food; and again in Germany, when like happenings caused sausages to be blamed. The so-called botulism that, during the spring of 1918 preceded our Spanish influenza, is still fresh in our memories.

At the present time our American cousins are dealing with cases of like nature following this time in the wake of the passing influenza; and canned tomatoes and bottled olives are bearing the discredit.

Just before the great influenza of 1889-90 there was, at Middlesboro, an epidemic of pneumonia, in which the cases were identical with those of November, 1918. High authority implicated American bacon as not unconnected with the affair. About the same time a new disease appeared in the Mediterranean islands and coastlands: food again was suspected; and an epidemic of nervous disease in Sweden, in 1888-9 (which attracted attention owing to the masterly studies of Medin and others) was of the same nature as that which, in 1916, in New York, together with outbreaks of pneumonia throughout the states, should have warned us of what 1918 had in store for the world.

But the few who, like Dr. Hamer, insisted on the relation of these outbreaks to pandemic influenza, were scoffed at by those who confute what they call theories by ignoring facts.

The evidence for these particular statements and general conclusions cannot here be given, but Dr. Hamer has shown (and I have tried, by some detailed investigations, to test his conclusions) that, in considering influenza we should not confine our researches to the so-called typical cases and epidemics, but should study the recurrent periods or constitutions, during which influenza pandemics occur, and we can discern an ordered progression from sudden, scattered, anomalous and autonomous outbreaks of nervous, respiratory, gastrointestinal and other forms of disease to the widespread diffusion of simple influenza with cases and foci of special character, and thence to a regression, through a stage of scattered, trailing epidemics, to a normal state of seasonal prevalence and fluctuation, which lasts throughout a term of years until a new cycle commences. We are now entering upon the final phase and dealing with stragglers, not with scouts; but is not the lesson clear?

If these conclusions be valid we should be enabled, by a due prosecution of our studies, to attain some success in prognostication; and to be forewarned is to be forearmed.

But again, if our studies lead us to believe, as I think they will, that the ultimate causes of influenza periods are telluric or cosmic variations in conditions of life, we shall at least be spared the chasing of a will-o'-the-wisp. I have heard it said that belief in such ultimate causes is to be deprecated as tending to pessimism, and as inducing disbelief in the value of bacteriological methods and the like.

The only question really worth considering, is that of the *validity* of the conclusions arrived at; not their consequences. If, however, investigation on lines of historic, philosophic, and epidemiologic enquiry enables us justly to envisage the relations of the phenomena with which we have to deal, then surely the statesmen, the sanitarians, the physicians, and the bacteriologists will be able to concert such measures as will fortify the world populations against the coming of the catastrophes that we, in the first place, ascribe to the inscrutable *influences* of natural agencies; such measures as will enable these populations best to help themselves in the face of actual danger.

Although, until war and pestilence are abolished, we must initiate schemes of defence, our faith in these schemes need not hinder us from taking the longer and broader view, and *vice versa*.

And, in order to prevent or minimize pestilence, we must take long and broad views; we must study the precursors of the picturesque catastrophes that strike the popular imagination: we must teach the specialists and the communities how to recognize the coming of danger, and how to minimize its incidence by organized effort and by self-control.

If we do this, the experience of one generation will not be forfeited by the next, but will

be handed down, a rich legacy of increasing capacity for racial adaptation, for the benefit of those who come after us.

BIBLIOGRAPHY.

Crookshank, F. G.: Proceedings, Royal Society of Medicine: (1) Section of History of Medicine, 1919, Vol. xii; (2) Section of Epidemiology, 1920, Vol. xiii.
Hamer, W. H.: Reports of the Medical Officer of the London County Council for 1917, 1918, 1919.

Book Reviews.

Studies in Neurology. By HENRY HEAD, M.D., F.R.S. Vols. II, pp. 862. London: Henry Frowde, Hodder & Stoughton, Ltd, 1920.

The studies of Henry Head in conjunction with his colleagues, W. H. R. Rivers, Gordon Holmes, James Sherren, Theodore Thompson and George Riddoch, have appeared in the Oxford Medical Publication Series, which places them conveniently in the hands of students and investigators. The two volumes entitled "Studies in Neurology," comprise the collected papers of this group of English investigators on the subject of the sensory mechanism in its broadest aspects. The papers appeared, originally, without exception in "Brain," but have now been reëdited with a number of chapters explanatory of the text and of the subject in general. It is quite impossible in the scope of a brief review to enter into details of this work, familiar for many years to neurologists and students of the nervous system. The theories underlying the principles of deep, protopathic and epicritic sensibility have been generally accepted although they have not been free from certain definite criticism which is summarized in an appendix with critical comment.

In general the work must stand as monumental evidence of painstaking industry and accurate scientific inquiry, essentially from the physiological and experimental standpoint. Its bearing upon clinical work is indirect but ultimately of importance, for example, in the exact statements regarding return of function after nerve injuries and like practical matters. The introductory chapter discusses methods of testing and questions pertaining to the investigation of the sensory system, together with a brief statement of the nature and integration of sensation in its progress from the periphery to the brain. The second chapter on methods of examining sensation should be carefully read and pondered, in that it lays stress upon the absolute necessity of accuracy in investigation if results of scientific value are to be attained, a matter too often overlooked in the cursory reports from clinical sources. Following this chapter is a discussion of clinical application of the methods advocated.

The body of the two volumes is taken up with a reprint of the individual papers and comment thereon.

The peripheral nervous system fills the first volume. Perhaps the most notable paper in this series is the personal experiment conducted by Rivers and Head, in which a nerve in Dr. Head's arm was cut and the clinical manifestations during recovery carefully tabulated. The second volume concerns itself with the spinal cord and particularly with the grouping of afferent impulses. The various phenomena of disturbed innervation resulting from gross lesions of the cord, such as the automatic bladder and sweating, are discussed in detail in connection with the theory of the "mass reflex." Finally the sensory disturbances from cerebral lesions find more ample description than is usually accorded them. Various problems of sensation in its relation to the cerebral cortex with illustrative cases are detailed.

Whatever the criticisms may be of the theoretical assumptions upon which this entire work on sensation is based, it cannot be denied that Dr. Head and his colleagues have done more than any other living neurophysiologists to illuminate and clarify this most difficult and elusive branch of neurology. Whatever new knowledge the future may bring regarding the mechanism of sensation, it must take into account the painstaking work of these English students of the subject. However much their ideas may be modified, it is not probable that any group of men will have either the patience or the collective ability to repeat the long series of researches which have become identified with the names of Head and his colleagues. It is a satisfaction that the scattered papers have been collected and reprinted in these two substantial volumes.

Public Health Laboratory Work. By HENRY R. KENWOOD, C. M. G., M. B., F. R. S., Edin., D. P. H., F. C. S., Seventh edition: Paul B. Hoeber. New York. 1920.

The seventh edition of this book presents an outline of the work of the Chemical Branch of Public Health Laboratory Work. In this volume is excluded almost entirely the subject of bacteriology, which it has been found necessary to consider in a companion volume. Part I deals with the chemical, microscopical and physical examination of water for public health purposes; Part II describes methods of analyzing sewage or sewage effluents; Part III considers soil examination; Part IV air analysis; Part V, food examination with reference to adulteration and other forms of sophistication; Part VI the examination of disinfectants. The book contains excellent plates, diagrams and tables, and presents these aspects of the subject which have been proven by experience to be most useful to the public health workers and students.

THE BOSTON
Medical and Surgical Journal

Established in 1828

THURSDAY, MAY 26, 1921

Published by The Massachusetts Medical Society under the jurisdiction of the following-named committee:

For three years HOMER GAGE, M.D., *Chairman*
EDWARD C. STREETER, M.D.
EDWARD W TAYLOR, M.D.
For two years WILLIAM H. ROBEY, JR., M.D.
ROGER I. LEE, M.D.
ROBERT B. OSGOOD, M.D.
For one year JAMES S. STONE, M.D.
HORACE D. ARNOLD, M.D.
CHANNING FROTHINGHAM, M.D.

EDITORIAL STAFF.

DAVID L. EDSALL, M.D.
WALTER B. CANNON, M.D.
REID HUNT, M.D.
ROBERT W. LOVETT, M.D.
EDWARD H. NICHOLS, M.D.
FRANCIS W. PEABODY, M.D.
JOHN P. SUTHERLAND, M.D.
S. BURT WOLBACH, M.D.
GEORGE R. MINOT, M.D.

WALTER P. BOWERS, M.D., *Managing Editor*
GEORGE G. SMITH, M.D., *Assistant Editor*

SUBSCRIPTION TERMS: *$6.00 per year, in advance, postage paid for the United States, $7.56 per year for all foreign countries belonging to the Postal Union*

Material for early publication should be received not later than noon on Saturday. Orders for reprints must be sent to the printer with galley proof of paper. Upon written request, authors will be furnished free one hundred eight-page reprints, without covers, or the equivalent in pages in articles of greater length.

The Journal does not hold itself responsible for statements made by any contributor.

Communications should be addressed to The Boston Medical and Surgical Journal, 126 Massachusetts Ave., Boston, Mass.

THE FIRST STATE SECTION MEETING OF THE AMERICAN COLLEGE OF SURGEONS.

F. J. COTTON, *Chairman* C. F. PAINTER, *Secretary.*

THE Massachusetts Section of the American College of Surgeons held its first annual session in Springfield, Mass., on Friday and Saturday, May 13 and 14, 1921. In spite of inclement weather, the attendance at all the meetings was gratifying. The registration book at headquarters in the Hotel Kimball, records the names of surgeons, not only from twenty cities and towns in Massachusetts, but also from every state in New England, and from Brooklyn, Baltimore, and Chicago.

A carefully arranged program had been most thoughtfully planned by the local Committee on Arrangements and was executed with admirable precision. When it is remembered that this was the initial effort, and that the committee was without any experience of other years to fall back on for ideas, it must be admitted that a standard has been set that future sessions will find difficult to equal. Springfield is not in any sense of the word, a medical educational center, with facilities that are commonly believed to make for advances in surgical knowledge and technique. The surgical staffs of its hospitals, however, demonstrated the end results of their surgical work in a remarkable showing of cured cases, many of whom came willingly from long distances, an exhibition comparable in completeness and brilliancy, if not perhaps in numbers, to any in the country. The list of cases creditably operated for this critical audience served simply to illustrate the high character of the surgery that is successfully accomplished here every week. All that was shown and done was instructive and well worth while, not only to local surgeons, but also to visitors who were visibly well impressed.

The plan for one public meeting was commendable. No small factor in its success was the happy selection of speakers who seemed intuitively to strike to a nicety that difficult middle ground that in technical matters holds the attention of a mixed audience because it is neither too far beyond the grasp of the untrained laity nor too familiar and elementary to the professional mind. Lay interest in the subjects discussed was apparent from the size of the audience in which Dr. Franklin Martin more or less truthfully asserted that he detected only four medical men.

The scientific session was characterized by papers of a very high order. The wish was afterwards freely voiced that the paper by Dr. Cannon might be delivered again at a public meeting for the benefit of the laity.

The success of the annual session, from every point of view, is unquestionable. It does not in the least detract from the praise due the local Committee on Arrangements to state that no small measure of the success was due to those who worked unnoticed. To the lesser lights on the hospital staffs; to the administrative departments of the hospitals; and especially to the nurses who, behind the scenes, gave silently and ungrudgingly the conscientious attention to countless unattractive, thankless, but essential details, that alone bring results, these inadequate words of grateful appreciation are extended.

At the Friday afternoon session on Hospital Standardization, Dr. Homer Gage of Worcester, gave a résumé of the efforts made at one of the Worcester Hospitals to apply some of the principles governing the conduct of a civil hospital as they are applied in military service. After

having pointed out that patients, hospital staffs and the community have a right to insist that the hospitals shall live up to the highest standards in all respects which are established for a given time and shall keep abreast with the times, he cited the ways in which this goal can be achieved. He emphasized that there should be a resident physician who should furnish the compulsion for keeping up to standards which civil hospitals lack, but which military hospitals have in abundance. At weekly staff meetings the work of the week is reviewed. If cases are not doing well under the care of any members of the staff, it is brought out at this meeting, whether all the facilities for the study and care of that case which the resources of the institution provides were being utilized, and also if the equipment of the hospital fell short in providing anything that could possibly help in the solution of the problems presented by the case or cases.

At one of the four weekly meetings in each month, a further critical study of the results is presented, based upon the length of time that cases are being kept in the hospital over and above the time that a case of that kind usually requires. In acute abdominal cases, the question of the promptness of commencement of treatment and the reasons for delay may be the subject of inquiry. Agreement between the pre- and post-operative diagnoses are checked up; the questions of the number of consultations asked for and secured, or asked for and not obtained, or needed but not asked for, may also be the subject of inquiry. At this time, tabulations of cases and results, diagnoses and agreements between pre-and post-operative findings; frequency of complications, infections and condition at discharge; causes of death, etc., are all carefully reviewed, and report made to the Administrative Committee, and through them to the Trustees. All of this is, of course, absolutely dependent upon a well worked out and punctiliously observed system of record keeping and filing for permanent preservation.

SUBJECT: *American College of Surgeons.* Dr. Franklin Martin.

Dr. Martin said that the influence of the Army and Navy upon the problem of hospital standardization was tending to carry over into civil life the organization of hospitals as carried out by the military authorities. A good many hospital people seemed to be disturbed in the beginning of the college activities in this field, and accused them of meddling in hospital problems. It became apparent in the earliest efforts of the college to improve surgical standards that this would necessarily involve the standardization of hospitals. The first step in the procedure was to make a survey of all the hospitals in the country.

At a very considerable expense this preliminary survey has been completed. Five hundred and twenty-nine days of survey work have been put in by those selected by the college to make these observations.

A second investigation of the hospitals by the college has been about completed. This time the study was limited to hospitals of 100 beds or more, of which there are 697 in the United States. Four hundred and seven of these hospitals have already accepted the minimum standard which the American College of Surgeons has established. It has been the endeavor of the college to conduct these surveys in an inoffensive way and, as a result of their earlier experiences, the hospitals are now welcoming the extension of the survey, and are almost invariably enthusiastic to establish the standards which the college has set forth.

SUBJECT: *The Work of the Hospital Surveyor.* Dr. James L. Smith.

Dr. Smith stated that the purpose of the hospital surveyors was to offer constructive criticism, not destructive. In all cases the person making the survey had endeavored to get in touch, not only with the hospital superintendent and make his observations in company with him, but also with the staff and trustees. After an inspection of the building and equipment, both for the carrying on of the ordinary administration, housekeeping, and laundry and kitchen arrangements, the survey was carried on to the operating room, laboratories, x-ray department and record room.

It was always, also, a part of the duty of the surveyor to ascertain if the staff had regular meetings at which the discussion of the work of the hospital was carried on at periodic intervals, and to what extent they followed up the case histories of the patients admitted to the hospital, and kept permanent records of everything that was connected with the conduct of the cases as they passed through the institution.

Subject: *The Program of the American College of Surgeons as Applied to Catholic Hospitals.* Rev. C. B. Moulinier.

The speaker reviewed the history of the attempt on the part of the American College of Surgeons to standardize hospital organization, and showed how the Catholic Hospital Association, which was formed seven years ago, has endeavored to coöperate with the college in carrying out its program in the institutions under its supervision. The minimum standard has been applied by the Catholic hospital organization to practically all of the hospitals under its jurisdiction. He pointed out the reason that military hospitals could be properly standardized was that there was a compelling force behind the hospital organization, a force that saw to it that the measures that they believed to be desirable and necessary were punctiliously carried out. If they were not, the Surgeon General of the Navy, or Army, as the case might be, was immediately acquainted with the offender and the hospital in question was brought up with a round turn.

The purpose of the College in bringing this subject so widely before the public, not only the public that is especially concerned in hospital management, but also the lay public at large, is to supply a moral backing to the situation just as the Surgeon General's purpose was to supply moral backing to the hospitals under its supervision.

He pointed out the fact that it was a moral obligation that staff, nurses, and everyone that is connected with the hospitals has in keeping accurate records of the patients that pass through.

The public are entitled, in the treatment of their sick, to the assurance that everything is supplied by the hospital that modern science and experience has shown to be worth while. A failure to come up to this standard is not only reprehensible, but is a moral failure.

Subject: *The Hospital Program of the American College of Surgeons and the Minimum Standard.* Judge Harold M. Stephens.

Judge Stephens stated that the primary object of the American College of Surgeons was to make better surgeons. Its first move in attempting to do this was the study of the 3000 hospitals which there are in the United States and Canada. This study was commenced in 1915 and included the study of the technique of doing the work of the hospital in all its phases, the personnel of the staff and the equipment which was provided by the trustees.

The defects that were most conspicuous were lack of staff organization, poor quality of staff personnel, lack of proper and scientific record making, defective equipment of all sorts, notably in respect to laboratory findings.

The sum total of the inefficiency of a hospital based upon defects of the character which the survey brought out, resulted in an impairment of the functioning power of the hospital. Improvement in these respects would therefore result in an increase in the functioning capacity of the institution that was willing to have itself improved.

Subject: *Experience with the Standardization Program of the American College of Surgeons from the Hospital Superintendent's Standpoint.* Waymau C. Lyon.

Since the Springfield Hospital, at which the speaker was the Superintendent, had put into operation the minimum standardization of the American College of Surgeons, it had stressed the importance of the case record system, the betterment of laboratory facilities and the organization of their staff. He emphasized the fact that in all attempts by organization and otherwise, to improve the hospital's efficiency, the ultimate object in view was the provision of better service for the patient. The taking of good hospital records and recording in available form, and the insurance of a permanency to the record and its care, is of the utmost value to the institution as well as to the patient and his friends.

It is of immense value, oftentimes, in the matter of the demands made upon the hospital records for court purposes. When the records are uniformly well taken, the hospital is credited with superior skill by those who are called upon to make use of such records in the conduct of court proceedings. He felt that the staff organization was, perhaps, of the most importance of the various methods which they had pursued in an endeavor to better the functioning of the hospital. He laid special stress upon the value of the monthly staff meetings, at which there were presented casualty reports which included, not merely the deaths which occurred in the hospital, but infections and complications of all sorts that might have been connected with the care of patients.

A discussion of these papers was opened by Dr. Brace Paddock of Pittsfield, who contributed a short paper relating to the obstetric situation in Massachusetts and the importance that the standardization of hospitals might have upon the management of this situation. He stated that in the state, between 600 and 700 women die yearly as a result of confinement, that is six or seven in the thousand. Thirty-nine per cent. of these deaths are thought to be avoidable. In a survey which has been hastily carried out with reference to the deaths occurring in public institutions among puerperal patients, twenty such hospitals have made return, but in general, the report of obstetric cases in public hospitals is very unsatisfactory, and very little can be learned in regard to the cause of the unfortunate results. Thirty-three per cent. of the deaths were the result of eclampsia; eleven per cent., sepsis; eight per cent., following Caesarean section.

Dr. P. E. Truesdale continued the discussion by saying that the hospital superintendents are the principal "beneficiaries under the act," so far as their relations to the matter of hospital standardization are concerned, and that they will welcome the surgeons delegated by the American College of Surgeons in the carrying out of the surveys which the College desires to make. He stated that it was already apparent in a number of institutions with which he was familiar that the effects of the survey had been beneficient. He made a plea for the inclusion in the records that the hospital is entitled to make for the autopsy, and hoped that some method would be worked out by which the results of clinical study and observation might find their confirmation, or the opposite, in the autopsy record. The weakness of this link in the chain was a serious one, he said.

Dr. E. A. Codman of Boston advocated that the great teaching institutions, as well as the hospitals, should stress the subject of hospital standardization wherever they had opportunity before the students.

Dr. Slattery, Superintendent of St. Elizabeth's Hospital, Brighton, had found the minimum standard established by the College to be a very effective club to keep the staff in line, for without properly kept records, they could not have the benefit of house officers, as none but an A class hospital would attract medical students to house officer positions.

Dr. Samuel Woodward of Worcester, entered into the discussion as a hospital trustee, urging a closer touch between the staff and the trustees. He stated that it was his opinion that boards of trustees should, where possible, have a surgeon as a member. In this way, a more sympathetic coöperation might be secured between the staff and the trustees.

The general subject was further discussed by Doctors Mehan of Lowell, Myrick of the New England Hospital for Women and Children, Dr. Shadman of Forest Hills, Dr. Carmichael of Springfield, and Dr. Prior of Malden.

Program of clinical exercises:

SPRINGFIELD HOSPITAL, FRIDAY, MAY 13, 1921.

ROOM 1
ACCIDENT

10.30-10.45, Dr. Jones
Transfusion and Path. Spec.
10.45-11.15, Dr. A. Rice
Osteomyelitis
11.30-12, Dr. Sweet
Multiple Fractures

ROOM 2
RECOVERY

10.30-11, Dr. L. Chapin
Heart Cases
11-12.30, Dr. Birnie
Caesarean Section and Intussusception Large Bowel

ROOM 3
N. AND TH.

10.30-11, Dr. Goodell
Mastoid Cases
11-11.30, Dr. Dalton
Eye Cases
12-12.30, Dr. Sullivan, Dr. Kilburn: G. U. Cases, Swift-Ellis

ROOM 4
S. OP. R.

10.30-11.30, Dr. Sweet, Dr. Bates, Dr. Van Allen
Malignant Diseases of the Bowel
11.30-12, Dr. Seelye
Non-malignant Diseases of Large Bowel
12-1, Dr. Ober.
Resection Operation on Stomach

ROOM 5
L. OP. R.

10.30-11.30, Dr. Carleton
Congenital Hip. Gas Bacillus Infection. Gunshot Wound
11.30-12.30, Dr. Wheat
Orth. Cases

ROOM 6
WARD A

10.30-11, Dr. Eastman
After-treatment and Feeding of Infants Following Operation for Pyloric Stenosis. Care of Premature Infants
11-12, Dr. Benner
Renal Calculus

X-RAY ROOM

Dr. Van Allen
X-ray Display. Radium Cases. Demonstration of Buckey Diaphragm.

ROOM 7
WARD B

Dr. Alcorn
Meningocele
Dr. Ober
Aneurysf, Aorta. Mesenteric Cyst. Oesophageal Stricture.
Dr. Eastman
Pneumothorax
Dr. Sweet
Unilateral Polycystic Kidney. Decortication of Lung for Empyema. Partial Nephrectomy
Dr. Hopkins
Submaxillary Glands. Calculus
Dr Alcorn
Cyst of Urachus. Resection of Stomach

Springfield Hospital, Saturday, May 14, 1921.

Large Room 1.

9.30 A.M., Dr. Alcorn, Appendectomy.
10.00 A.M., Dr. Alcorn, Abd. Hysterectomy (Fibroid).
10.45 A.M., Dr. Alcorn, Ex. Laparotomy (Carcinoma—Secondary).
11.30 A.M., Dr. Alcorn, Vaginal Hysterectomy (Prolapse).
11.45 A.M., Dr. Alcorn, Appendectomy.

Small Room 2.

8.30 A.M., Dr. Benner, Herniotomy.
9.00 A.M., Dr. Benner, Gall-bladder.
9.30 A.M., Dr. Seelye, Double Herniotomy.
10.45 A.M., Dr. Carleton, Old Potts Fracture.
11.30 A.M., Dr. Carleton, Osteomyelitis.

Nose and Throat Room.

10.00 A.M., Dr. Dalton, Mastoid.
10.30 A.M., Dr. Dalton, Needling Cataract.
12.00 M., Dr. Sullivan, Swift-Ellis (2 cases).

Chapin Operating Room.

8.00 A.M., Dr. Sweet, Appendectomy.
8.20 A.M., Dr. Sweet, Amputation Breast.
9.00 A.M., Dr. Sweet, Appendix.
9.20 A.M., Dr. Sweet, Ventral Hernia.
10.20 A.M., Dr. Sweet, Double Inguinal Hernia.
11.00 A.M., Dr. Sweet, Amputation Breast.
11.45 A.M., Dr. Sweet, Barton-Hirst.
8.15 A.M., Dr. Goodell, Adenoids and Tonsils.

Mercy Hospital, Friday, May 13, 1921.

Eye, Ear, Nose and Throat.

10.00 A.M., Clinic End Results (4 cases), Large Ward, First Floor, H. F. Byrnes, M.D.
10.00 A.M., Operation: Submucous Resection (adult), J. O. Beauchamp, M.D.
10.00 A.M., Operation: Submucous Resection (child), J. H. Gallagher, M.D.
11.00 A.M., Operation: Tonsillectomy (child), F. J. McKechnie, M.D.
11.30 A.M., Operation: Tonsillectomy (adult), H. F. Byrnes, M.D.

General Surgery.

9.30 A.M., Rectal Fistula (female), Curettage Head of Femur—Tuberculosis—(male), Fistula in Ano (male), C. F. Lynch, M.D.
11.30 A.M., Hysterectomy—Fibroid—(female), Gastroenterostomy—Ulcer Pylorus—(male), D. and C.—Pelvic Peritonitis, Retroversion of Uterus, E. J. Mahoney, M.D.

Mercy Hospital, Saturday, May 14, 1921.

Eye, Ear, Nose and Throat.

10.00 A.M., Operation: Tonsillectomies (children), J. H. Gallagher, M.D.
10.00 A.M., Operation: Tonsillectomies (children), F. J. McKechnie, M.D.
10.30 A.M., Operation: Tonsillectomy (adult), H. J. Byrnes, M.D.

General Surgery.

9.30 A.M., Herniotomy, Umbilical, (male); Herniotomy, Femoral, (female); Herniotomy, inguinal, (male); Nephropexy (female); Hysterectomy, Appendectomy, Fixation of Uterus, Glands of Neck (female); Intestinal Obstruction, Carcinoma (female), E. J. Mahoney, M.D.
10.00 A.M., Duodenal Ulcer, Pancreatitis Hemorrhagica, C. F. Lynch, M.D.
Perth's Disease, Lymphatic Leukemia, Multiple Fractures, J. P. Byrnes, M.D.
Skin Graft, R. A. Rochford, M.D.
Muscular Spiral and Ulnar Paralysis, G. B. Corcoran, M.D.

Wesson Memorial Hospital, Friday, May 13, 1921.

Demonstrations.

10.30 A.M.-12 M., X-ray Work, Gorman.
10.30 A.M.-12 M., Drainage of Gall-bladder by Einhorn Duodenal Tube, Cline.
10.30 A.M.-12 M., Imperforate Nostrils, Conrow.
10.30 A.M.-12 M., Fracture Femur (2 cases), Hovey.
10.30 A.M.-12 M., Osteomyelitis (2 cases), Carmichael.
10.30 A.M.-12 M., Ventral Hernia (post operation), Smith.
10.30 A.M., Operation: Laparotomy, Smith.

Wesson Memorial Hospital, Saturday, May 14, 1921.

Operations.

9.30 A.M., Gastroenterostomy, Carmichael.
10.30 A.M., Nephropexy, Carmichael.
11.00 A.M., Umbilical Hernia, Hovey.
11.30 A.M., Salpingo oöphorectomy, Smith.
12.00 M., Tonsils and Adenoids, Chapman.
12.30 P.M., Uterine Suspension, Hovey.

NOTES FROM DISTRICT SOCIETIES.

The Hampshire District Medical Society held its annual meeting at the Forbes Library, Northampton, on May 11, at 11.30 A.M. Dr. Sidney A. Clark, Northampton, gave the presidential address, "Medical Practice 30 Years Ago." Dr. H. T. Weston of Hartford, Conn., addressed the members on liability insurance. The following officers were elected: President, Dr. A. J. Bonneville, Hatfield; Vice-President, Dr. C. E. Perry, Haydenville: Secretary-Treasurer, Dr. E. E. Thomas, Northampton; Librarian, Dr. L. O. Whitman, Northampton; Commissioner of Trials, Dr. S. A. Clark; Censors: Dr. J. E. Hayes, Supervisor, Northampton; Drs. F. E .Dow and W. J. Collins, Northampton; H. G. Rockwell, Amherst, and W. P. Stutson, Cummington; Counsellors, Drs. J. E. Hayes, H. B. Perry, D. M. Ryan, Ware, and O. W. Cobb, Easthampton.

The annual meeting of the Essex South District Medical Society was held at Wardhurst, Lynnfield, on May 11, at 6.30 P.M. The annual reports of the Secretary, Treasurer and Auditor were accepted for the files. The following officers were elected for the ensuing year:

President, Dr. P. P. Johnson, Beverly; Vice-President, Dr. J. B. MacDonald, Hathorne; Secretary, Dr. G. E. Tucker, Salem; Treasurer, Dr. G. Z. Goodell, Salem; Librarian, Dr. C. M. Cobb, Lynn; Commissioner of Trials, Dr. J. E. Simpson, Salem; Council, Dr. W. T. Hopkins of Lynn, Dr. E. S. O'Keefe of Lynn, Dr. J. F. Donaldson of Salem, Dr. W. G. Phippen of

Salem, Dr. A. N. Sargent of Salem, Dr. H. K. Foster of Peabody, Dr. J. F. Jordan of Peabody, Dr. R. E. Stone of Beverly, Dr. G. M. Kline of Beverly, Dr. S. P. F. Cook of Gloucester, Dr. S. W. Mooring of Gloucester; Nominating Councillor, Dr. W. G. Phippen, Salem; Alternate Nominating Councillor, Dr. R. E. Stone, Beverly; Censors, Dr. J. F. Donaldson (Supervisor) of Salem, Dr. J. A. Shatswell of Beverly, Dr. F. W. Baldwin of Danvers, Dr. J. W. Trask of Lynn, Dr. A. T. Hawes of Lynn; Executive Committee, Dr. C. L. Curtis of Salem, Dr. P. P. Moore of Gloucester, Dr. W. L. Fraser of Lynn.

A resolution was adopted declaring it to be the sense of this meeting that the change in rates for service to physicians proposed by the New England Telephone Company is inequitable. It was further voted to send a committee to the hearing upon this subject granted by the Commission on Public Utilities, that this Society might join the Somerville Medical Society in protest against the proposed change.

The guest of the evening was Dr. William H. Smith of Boston, whose address was upon "Angina Pectoris." A general discussion followed, and the meeting terminated with a rising vote of thanks to the speaker.

THE FRANKLIN DISTRICT MEDICAL SOCIETY held its annual meeting May 10th, following dinner at the Mansion House, Greenfield, at 6.30 P.M. Dr. H. N. Howe read a very instructive paper on "Broncho Pneumonia in Young Children." This was pronounced by all who were permitted to hear it, of such comprehensive breadth and insight that it would be well worth being printed in the BOSTON MEDICAL AND SURGICAL JOURNAL. Dr. A. L. Johnson gave a brief and helpful abstract from recent literature on "Encephalitis Lethargica." The question of entering into action with other societies in protesting the proposed "business rates" for the physicians by the N. E. Telephone Co., was discussed, but no action taken. The motion by Dr. Twitchell to endorse the proposition of a joint meeting with the Berkshire, Hampshire and Hampden societies was adopted. Dr. Goldsbury reported upon the formation of a committee to promote "Rural Health and Medical Service," and of its object to advance the interests of physicians away from the big centres through the establishment of hospital clinics within their reach. He has visited about half the towns in the county, and interviewed some 25 physicians regarding this and the plans of social service agencies in putting in county and district nurses. The following officers were elected: President, J. A. Mather; Vice-President, H. A. Suiter; Secretary and Treasurer, H. N. Kemp; Censors, H. G. Stetson, H. N. Howe, Charles Moline, R. H. Philbrick and A. L. Newton; Commissioner of Trials, P. F. Leary; Nominating Councillors, H. G. Stetson and C. L. Upton; Auditors, C. F. Canedy and A. L. Johnson. Reporter for the MEDICAL JOURNAL, P. W. Goldsbury.

MEDICAL NOTES.

THE JOURNAL will not be sent to those members of the Massachusetts Medical Society whose annual dues remain unpaid after June 1, 1921.

YEAST NOW IN PILL FORM.—The value of yeast as a source of vitamines has become well established. Yeast has been used for many years with good results in the treatment of boils, acne, scurvy, infantile eczema and intestinal troubles; also for the correction of chronic constipation. The chief drawback to the use of the yeast itself for medicinal purposes is that many find it unpalatable, often indeed nauseating. By the introduction of Yeastone (the active principles and vitamines of yeast in pill form), these difficulties are removed. Physicians can obtain Yeastone pills from their druggists by writing "Merck" on prescriptions and making the request to order if not in stock.

THE JOURNAL is informed that the scope of work done in the Charles B. Towns Hospital is extended to deal with postoperative and medical convalescent patients suffering with toxemic disorders due to faulty metabolism. Physicians sending patients may coöperate in the treatment given.

WOMEN OF THE PUBLIC HEALTH SERVICE.—In proportion to its size, the personnel of the U. S. Public Health Service probably includes more highly trained and specialized women than any other branch of the Federal Government.

Highest on the list stand two officers holding commissioned rank in the reserve — Surgeons Lydia Allen DeVilbiss and Josephine Baker. Next in rank come a number of scientific and

professional women, all, or most of whom are physicians, though some are classified by other titles. Among these are Acting Assistant Surgeons Blanche Sterling and Edith B. Lowry, Viola Russel, pediatrist, and Elizabeth B. Reid, all of the Child Hygiene Section; Ida A. Bengtson, Sanitary Biologist; and Mrs. S. C. Brooks, Assistant Biologist, all of the Hygienic Laboratory; Gertrude Seymour, President of the American Women in Public Health, and Drs. Daisy Robinson and Edith Rabe, regional consultants, all of the venereal diseases divisions.

Several large groups of highly trained women have been organized in the Public Health Service. Among these are the reconstruction aides, most of whom have had college training or its equivalent, and all of whom are of unusual ability and character. These are stationed at various hospitals of the Service throughout the country. Their task is to help maimed soldiers to regain control of injured muscles and nerves, or of dormant or deranged mental faculties by appropriate physical exercises (physio-therapy) or by curative and diversional occupations (occupational therapy). The aides, who are headed by Miss Marian Morriss, number about 400, to whom others will be added as qualified applicants can be found.

Vieing with the reconstruction aides are the dietitians, whose section was organized about a year ago to take over from the pharmacists the victualing and food administration of the scores of military hospitals now handled by the Public Health Service. All the members of the section, which is headed by Mrs. H. B. Corsette, are graduates of schools of household economics and are thoroughly trained and experienced in all matters relating to dieting. When fully recruited, the personnel will be about 200.

The nurses' corps, headed by Miss Lucy Minnegerode, consists of nurses who have been highly trained in every-day hospital work and a large proportion of whom are specialists in particular lines, such as mental and nervous diseases and tuberculosis. The corps today numbers 1,400 and needs 300 more. All applicants must, however, be graduates of recognized training schools, and must be registered either in the state in which they live or in that in which they were graduated.

Another body of nurses, 165 in number, who work in clinics and miscellaneous health activities, under the supervision of Miss Ann Doyle, specializes in venereal disease treatment.

BOSTON AND MASSACHUSETTS.

Week's Death Rate in Boston.—During the week ending May 14, 1921, the number of deaths reported was 185 against 209 last year, with a rate of 12.74 against 13.48 last year. There were 39 deaths under one year of age against 24 last year.

The number of cases of principal reportable diseases were: Diphtheria, 57; scarlet fever, 45; measles, 107; whooping cough, 18; typhoid fever, 2; tuberculosis, 30.

Included in the above were the following cases of non-residents: Diphtheria, 7; scarlet fever, 6; tuberculosis, 5.

Total deaths from these diseases were: Diphtheria, 7; measles, 1; whooping cough, 1; typhoid fever, 1; tuberculosis, 18.

Included in the above were the following cases of non-residents: Diphtheria, 2; tuberculosis, 3.

The Regular Meeting of the New England Association for Physical Therapeutics was held on Tuesday, May 24, at 8 o'clock, at the Hotel Victoria, Boston. The subject of the evening was an address by William L. Clark, M.D., of Philadelphia, on "Electrothermic Methods and Radium in Surgical Conditions." Dr. Clark has done a good deal of original work in this line. A Table d'hôte dinner was served in the Grill Room, Hotel Victoria, at 6.30 P.M.

"Suprarenalin" Again Available. — For some years the epinephrine preparation most widely used in the United States has been the "adrenalin" brand, although synthetic "suprarenin," originally of German origin, has been listed. It is now announced (Report of the Council on Pharmacy and Chemistry, *Jour. Amer. Med. Assoc.*, 76, May 14, 1921, p. 1353) that the "suprarenalin" brand (prepared by Armour and Company of Chicago) is again available: this differs from the more commonly employed brand of epinephrin in that the solution is that of the sulphite instead of the hydrochloride. It is marketed in the form of a 1 to 1,000 solution.

Public Health Service.—Since the signing of the armistice, state boards of health, assisted by the U. S. Public Health Service, have established in dispensaries and hospitals, more than 400 clinics for the free treatment of persons afflicted with venereal diseases (gonorrhea and syphilis).

To aid in the work, the Federal Government appropriated more than two and a half million dollars to be allotted to the States on a fifty-fifty basis; and now every state in the Union has accepted the offer.

At the clinics, diseased persons receive, free of charge, or at small expense, the best modern treatment that money and science can provide. Arsphenamine (606) and other expensive drugs are provided for patients who are unable to pay for them. Without this help, many infected persons would never be treated; with it, thousands have been cured and many thousands of walking sources of infection have been removed. In the last two years, more than 200,000 persons were treated in these clinics; and in 1920 alone, a million and a half treatments were given.

The last Congress, however, failed to continue this coöperative appropriation; and, unless the present Congress comes speedily to the rescue, Federal aid to the states must cease soon after June 30.

PUBLIC HEALTH SERVICE AND NERVOUS MENTAL DISEASES.—Drs. J. K. Fuller and T. J. Heldt, both of the U. S. Public Health Service, left Washington on April 2 to visit the medical colleges of the United States to recruit personnel, especially internes, for the care of nervous mental patients in service hospitals. Dr. Fuller, who has been directing the clinical work at St. Elizabeth's Hospital in Washington, is visiting southern and western colleges; and Dr. Heldt, clinical director of the Service Hospital at Waukesha, Mich., is visiting those in the North and Middle West.

Dr. G. H. Benton, of the staff of the U. S. Public Health Service's Neuropsychiatric Hospital at Waukesha, Wis., will read a paper on "War Neuroses," before the American Medical Association meeting at Boston, Mass. Like other officers serving in such hospitals, Dr. Benton has had wonderful opportunities to study the varied types of neuroses, ranging from anxiety and tremulous states to aphroia and functional defects, many of these complicated by endocrine imbalance and focal infection.

HEARING ON TELEPHONE RATES.—An all-day session of the Public Utilities Commission was held on May 12 for the purpose of giving an opportunity to physicians of Greater Boston to register their protests against the proposed action of the Telephone Company. The Company, as has been stated in the JOURNAL, proposes to charge business rates for telephones installed in the residences of physicians. Over 300 doctors attended the hearing, together with many senators and representatives from the legislature. The case of the physicians was presented by Attorney William A. Morse, who had been retained by the Somerville Medical Society. Representative John M. Woods of Somerville, Dean of the Massachusetts House of Representatives, was called first after the opening argument by Attorney Morse. Mr. Woods spoke, as a citizen, of the value and necessity of physicians to the community. Dr. Charles E. Abbot of Andover, and Dr. Ezra W. Clark of Brockton, both members of the Massachusetts Legislature, spoke against the measure. Drs. M. W. White, Chas. T. Mongan and H. E. Buffum outlined the position of the Somerville Medical Society, which resulted in the request for the hearing. Dr. Fred B. Lund, president of the Suffolk Society of 1000 members; Dr. Walter Lane representing 600 members of the Norfolk Society; Dr. Harvey Van Allen of Springfield, representing 600 physicians in his district, and Senator Tarbell, professionally representing 500 physicians of his constituency, all spoke in opposition to the measure. Numerous individual physicians spoke. The contention of the Telephone Company was that the word, "Phys," inserted in the telephone directory after the doctor's name, constituted an advertisement.

The Massachusetts Medical Society

PROGRAM OF THE ONE HUNDRED AND FORTIETH ANNIVERSARY.

Owing to the meeting of the American Medical Association, in Boston, the week following the meeting of the Massachusetts Medical Society, there will be no Section meetings this year. The exercises on Tuesday, May 31, will be held at the Boston Medical Library, 8 The Fenway; those on Wednesday, June 1, at the Copley-Plaza Hotel.

A **Bureau of Information** will be maintained in the lobby of the Copley-Plaza Hotel, Wednesday morning. **Fellows are requested to register and procure their dinner tickets as early as possible on Wednesday.** Tables cannot be reserved, but those who procure their tickets early will be able to sit together, if they wish. The Dinner will be held at 1 P. M The price of the tickets will be two dollars

Automobiles may be parked, under supervision, at the Medical Library, Tuesday, and at the Copley-Plaza, Wednesday.

TUESDAY AFTERNOON, MAY 31, 1921.

Boston Medical Library.

ANNUAL MEETING OF THE SUPERVISORS

John Ware Hall, 4.30 O'Clock.

ANNUAL MEETING OF THE COUNCIL

John Ware Hall, 5.00 O'Clock.

The "Cotting Lunch" will be served immediately after the meeting, in the Supper Room.

TUESDAY EVENING, MAY 31, 1921.

THE SHATTUCK LECTURE.

John Ware Hall, 8.00 O'Clock.

By Dr. Haven Emerson of New York.

Subject: **"The Prevention of Heart Disease, A New Practical Problem."**

After the lecture light refreshments will be served in the Supper Room.

WEDNESDAY MORNING, JUNE 1, 1921.

ONE HUNDRED AND FORTIETH ANNIVERSARY

Foyer, Copley-Plaza Hotel, 9.30 O'Clock.

Business of the Annual Meeting.

The following amendments to the By-Laws, as approved by the Council, February 2, 1920, will be acted on:

Chapter IV, Section 3, of the By-Laws be so amended that the last sentence of paragraph one shall read: "Councilors only, shall be eligible to the offices above named," viz., president, vice-president, secretary, treasurer and librarian, thus conforming the By-Laws to the Statutes, 1803, Chapter 85, Section 3. Digest, Article V, paragraph 3, which provides that the Councilors shall "appoint, from among themselves, a president, and such other officers of the said corporation as are to be so appointed."

Chapter I, Section 2 of the By-Laws: After the words "fiscal year," line two, insert in parenthesis marks "except as hereafter provided in Section 6 of this chapter"; also Chapter I, Section 6. The last sentence of paragraph one shall read: "The assessment paid by fellows who are admitted to the society following the November examinations, shall be that fixed for the next succeeding fiscal year, and shall cover the dues both for the current year and for the next fiscal year."

The following papers will be presented:

1. **"Maternity Aid and Infant Welfare."**
   Dr. Walter P. Bowers, Clinton.
2. **"Legislative Aspects of Vaccination."**
   Dr. Samuel B. Woodward, Worcester.
3. **"Physical Education of Children and Physical Training in the Public Schools."**
   Dr. Joel E. Goldthwait, Boston.
4. **"Premedical Education."**
   Dr. David L. Edsall, Cambridge.

The Annual Discourse will be given by Dr. F. W. Anthony of Haverhill, at 12 noon.

Subject: **"Some of the Mutual Relations Between the Physician and the Commonwealth."**

The Annual Dinner will be served in the Ball Room immediately after the Annual Discourse.

MEETINGS OF THE COUNCIL

The Annual Meeting, Tuesday, May 31, 1921, at the Boston Medical Library. Other Stated Meetings in John Ware Hall, Boston Medical Library, on the first Wednesdays of October and February.

CENSORS' MEETINGS.

The Censors for the several districts will meet for the examination of applicants for fellowship on the first Thursdays of May and November.

The Censors for the Suffolk District will examine applicants residing in that district and also applicants who are non-residents of Massachusetts.

Applicants for fellowship should apply to the Secretary of the District Society of the district in which they reside (have a legal residence) at least one week before the date of a given examination, taking with them their degrees in medicine.

OFFICERS OF THE SOCIETY.

Alfred Worcester, ... President
751 Main Street, Waltham, Boston 54.

Frederick Ellis Jones, . . . Vice-President
1150 Hancock Street, Quincy, Boston 69.

Walter L. Burrage, ... Secretary
42 Eliot Street, Jamaica Plain, Boston 30.

Arthur K. Stone, ... Treasurer
Auburn Street, Framingham Center.

Edwin H. Brigham, Brookline, . . Librarian
8 The Fenway, Boston 17.

STANDING COMMITTEES.

OF ARRANGEMENTS.

C. H. Lawrence — J. B. Swift
Donald Macomber — K. G. Percy
A. W. Reggio — F. J. Callanan

ON PUBLICATIONS AND SCIENTIFIC PAPERS.

E. W. Taylor — R. B. Osgood — F. T. Lord
R. M. Green — A. C. Getchell

ON MEMBERSHIP AND FINANCE.

S. B. Woodward — A. Coolidge, Jr. — Samuel Crowell
Gilman Osgood — Homer Gage

ON ETHICS AND DISCIPLINE

J. W. Bartol — Henry Jackson — T. J. Robinson
David Cheever — F. W. Anthony

ON MEDICAL EDUCATION AND MEDICAL DIPLOMAS.

C. Frothingham C. F. Painter J. F. Burnham
A. G. Howard R. L. De Normandie

ON STATE AND NATIONAL LEGISLATION.

Alfred Worcester F. G. Wheatley E. H. Stevens
F. E. Jones J. S. Stone

ON PUBLIC HEALTH.

E. H. Bigelow Annie L. Hamilton E. F. Cody
Victor Safford R. I. Lee

DELEGATES AND ALTERNATES TO THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION.

DELEGATES	ALTERNATES
F. B. Lund	W. H. Robey, Jr.
E. F. Cody	F. W. Anthony
H. G. Stetson	L. A. Jones
C. E. Mongan	Gilman Osgood
J. F. Burnham	A. R. Crandell

C. H. LAWRENCE, { Chairman of Committee of Arrangements

520 Commonwealth Avenue, Boston 17.

THE JOURNAL.

The *Boston Medical and Surgical Journal*, the official organ of the Society, will be sent to Fellows who have paid their assessments, and to such Honorary and Retired Fellows as may apply to the Librarian for the *Journal*. All inquiries in regard to the *Journal*, and prompt notice of change of address, to prevent misdirection, should be addressed to the Librarian.

TREASURER'S NOTICE.

ASSESSMENTS SHOULD BE PAID TO DISTRICT TREASURERS BEFORE THE MEETING OR, IN THE CASE OF NON-RESIDENTS, TO THE TREASURER.

ASSESSMENTS WERE DUE JANUARY 1ST, BUT FOR THE CONVENIENCE OF MEMBERS WHO HAVE BEEN UNABLE TO PAY, ASSESSMENTS WILL BE RECEIVED FOR THE TREASURER AT THE MEETING.

NOTICES.

BOSTON CITY HOSPITAL.—Staff Clinical Meeting, Cheever Surgical Amphitheatre, Friday, May 27, 1921, at 8.15 o'clock P.M.

TOPICS.

1. Some Aspects of the Functional Pathology of Lobar Pneumonia. Speakers: Thomas E. Buckman, M.D., 15 minutes; F. Dennette Adams, M.D., 10 minutes; Harold T. Edwards, M.D., 10 minutes. Discussed by James Means, M.D.
2. Studies in Cutaneous Reactions in Pneumonia. Speaker: George H. Bigelow, M.D., 15 minutes.
3. Studies in Immunity in Pneumonia. Speakers: W. L. Moss, M.D., and L. H. Ferguson, M.D., 15 minutes.
4. Studies in Pneumonia in Children. Speaker: Arthur B. Lyon, M.D., 10 minutes.

Physicians and medical students invited. Open discussion. Dr. Edwin A. Locke will preside.

BIGELOW MEDAL ADDRESS.—Dr. William J. Mayo will give an address entitled "In the Time of Henry Jacob Bigelow," on Monday, June 6, 1921, at half past eight o'clock, Jordan Hall, Huntington Avenue and Gainsboro Street, Boston. On this occasion will be made the first award of the Henry Jacob Bigelow medal. Tickets of admission may be secured by addressing Dr. Walter C. Howe, Secretary Boston Surgical Society, 303 Beacon st., Boston, Mass.

THE ANNUAL MEETING OF THE COUNCIL will be held in John Ware Hall, Boston Medical Library, 8 The Fenway, May 31, 1921, at 5 o'clock P.M.

BUSINESS.

1. Reports of Standing Committees.
2. Petitions for restoration to the privileges of fellowship.
3. Report of Committee of Nine, on the JOURNAL.
4. Reports of Treasurer and Librarian.
5. Election of officers and orator for 1921-1922.
6. Appointment of Standing Committees for 1921-1922.
7. Elect three members of Committee on Nine for three years.
8. Incidental Business:
   (*a*) A memorial to Dr. Samuel Fuller (1580-1633).
   (*b*) Preamble and resolution of National Anaesthesia Research Society.
   (*c*) A delegate to Second International Eugenics Congress in New York City, September 22-28, 1921.

WALTER L. BURRAGE, *Secretary.*

Boston, May 24, 1921.

Councilors are reminded to sign the attendance book before the meeting.

HARVARD MEDICAL SCHOOL.—Dr. Carlos Chagas, Director of the Institute Oswaldo Cruz, Rio de Janeiro, touring the United States under the direction of The Rockefeller Foundation, will give a series of three lectures with lantern slides at the Harvard Medical School, on the following dates: Thursday, May 26, 5 P.M., Amphitheatre E, "American Trypanosomiasis: Studies of the Parasite and of the Transmitting Insect"; Friday, May 27, 12.30 P.M., Amphitheatre A, "Cardiac Forms of American Trypanosomiasis"; Friday, May 27, 5 P.M., Amphitheatre E., "Pathogenic Processes of American Trypanosomiasis."

RECENT DEATHS.

DR. WILLIAM ALLEN BROOKS died May 19, 1921. Extended obituary notice will appear later.

DR. CHARLES F. MCCARTHY died May 19, 1921.

DR. AURELIUS E. SHERWIN died April 8, 1921, at 612 Columbus Avenue, Boston, aged 84. He was graduated from the University of Vermont Medical School in 1878. He was a member of the Vermont and White River Junction Medical Societies. He practised in Boston thirty years. Early in life he was Superintendent of Schools in Barton, Vermont.

DR. BRADFORD ALLEN, a Fellow of the Massachusetts Medical Society, died by suicide at his home in Nashua, N. H., May 2, 1921, at the age of 64.

He was born in East Bridgewater, Mass., January 23, 1857, received his education in the schools of that town and at Amherst College, where he took the degree of S.B. in 1878. He was graduated at Harvard Medical School in 1883, joined the Massachusetts Medical Society the following year and went abroad to study medicine further, serving as house officer at the Rotunda Hospital in Dublin, Ireland. On returning, he settled in Nashua, where he practiced until shortly before his death. He was a member of the New Hampshire Medical Society and of the American Medical Association, also of the Nashua Board of Education, serving as president. He had been in poor health for some time previous to his death.

POPULAR SPECIALTIES

Stocked by leading wholesale and enterprising retail druggists in all parts of the United States.

LUTEIN—CORPUS LUTEUM—TABLETS, H. W. & D.

For ovarian dysfunctions and insufficiency. Especially for climacteric disturbances.
45 five grain or 100 two grain tablets in a tube Dose: 10 to 30 grains daily.

BENZYL BENZOATE—MISCIBLE, SOLUTION, H. W. & D.

For painful or distressing spastic contractions of smooth muscular tissue, especially that of the abdominal viscera. An efficient vasodilator in hypertension. 20 per cent. miscible alcoholic solution in 2 fluid ounce bottle.
Dose: From ten drops to two teaspoonfuls, largely diluted and sweetened.

BULGARA—BACILLI BULGARICI—TABLETS, H. W. & D.

For intestinal putrefaction and fermentation. Change intestinal bacterial environment.
50 tablets in a tube Dose: 3 to 6 tablets daily. Cool feedings before adding tablets.

Ample Literature Upon Request

HYNSON, WESTCOTT & DUNNING

Baltimore

367 BOYLSTON ST. BOSTON, MASS.
Delegates: Make Our Headquarters Yours, While In Boston

A SMALL HOME SCHOOL

In the pine woods, for delicate or young children. Care of Trained Nurse. Excellent teaching. Outdoor life. Apply to
Rev. Mother, O. S. A.
St. Anne's House
44 Temple St., Boston, Mass.
2-tf,B363

TO LET AT 74 DAY STATE ROAD

Single and double offices for doctors.
11-tf,B401

PRACTICE FOR SALE

Unusual opportunity for a good man to take general practice. Established ten years, last year collected $6,000. Have a desirable home to go with practice if desired. Price of home, $10,000; practice, $1,500. Would stay and introduce. I wish to specialize. Address
A291, Care of
Boston Medical and Surgical Journal
17-tf

900 BEACON ST.

To rent, entire second floor for doctor's office, with privilege of living in same.
10-tf,B390

PRACTICE FOR SALE

The practice, house and equipment of the late Dr. A. F. Peck in Spencer, Mass., offers an attractive opportunity for a general practitioner looking for a rare opening. Dr. Peck died very suddenly on March 31, 1921, leaving his practice in first-class shape. Address
Mrs. F. A. PECK,
125 Main St., Spencer, Mass.
15-tf,B399

TO LET

Rentable portion of favorably located office. Particularly suitable for suburban specialist wishing location in center of Boston. Faces Common on Boylston St. Room 5, Park Building.
Dr. PERRY
Tel. Beach 1584 15-tf,B398

WANTED

One assistant physician and one pathologist at the Medfield State Hospital. Address Dr. E. H. Cohoon, Superintendent, Medfield State Hospital, Box A, Harding, Mass. Telephone, Medfield 190.
21-t2,B411

WANTED

Male assistant resident physician. Female assistant resident physician. Permanent positions. Good chance for advancement. Suitable accommodations for those who are married. State Hospital in Massachusetts. Address
A297, Care of
Boston Medical and Surgical Journal
21-4t

WANTED

Assistant physician at the Bridgewater State Hospital. Previous experience with insane unnecessary, but general medical training essential. Good opening for unmarried man. Compensation includes salary, board, room and laundry. Apply F. H. CARLISLE, M.D., Medical Director
Bridgewater State Hospital,
State Farm, Mass. 21-4t,B409

WANTED

Woman physician at Connecticut State Farm for Women at Niantic, Conn. For information address
Ida M.S. Thompson, Secretary
190 Retreat Ave., Hartford, Conn.
20-4

WANTED

Male assistant physician to fill vacancy on medical staff of the State Hospital for Mental Diseases, Howard, R. I. Address
Arthur H. Harrington, M.D., Supt.
20-tf,B407

FOR SALE

$4000 cash medical practice in Southern New Hampshire town. Good reason for selling. Address.
A295, Care of
Boston Medical and Surgical Journal
20-3t

OFFICE TO SHARE

Having a well equipped office at 353 Commonwealth Ave., I would like to share it, for the morning or late afternoon hours, with some other physician.
Dr. GEORGE ELISHA MAY
Phone, Back Bay 9800
18-tf B403

PRACTICE FOR SALE

Unopposed practice in New Hampshire town of about 1000. Reasonable terms. Leaving to specialize. Address
A284, Care of
Boston Medical and Surgical Journal
13-tf

WANTED

Laboratory position in hospital or busy doctor's office, by competent young lady; experience in Wassermanns, urines, tissues, blood chemistry, and general bacteriology; college graduate; best of references. Available August or September. Address
A298, Care of
Boston Medical and Surgical Journal
21-2t

CAMPBELL ELECTRIC E COIL

Used very little. New, $300; will sell for $150. X ray attachment. Call Lynn 5435 or 1716-W. 21-1t,B412

!! DOCTORS ATTENTION !!

THE SPACIOUS RESIDENCE

OF THE LATE THEODORE N. VAIL

MUST BE SOLD

One hundred thirty acres of land with barns, garage, greenhouses, out-buildings, etc. Over fifty rooms in residence. Splendid chance for sanatorium. Vermont air and scenery a tonic to mind and body.

For full particulars address

W. N. HUBBARD

Lyndonville, Vermont

VICTORY KNOLL CAMP

Moody Mountain Maine

For children under 14 years.

Endorsed by leading Surgeons and Physicians. All sports, tutoring, hiking, trips. Attending Physician. Resident Nurses. Councilors all leaders. Referenccs required. Send for illustrated catalogue. Until June 1st, address

THE MISSES GEARON

839 Boylston Street, Boston, Mass.

17-8

A Relief for Chronic

Constipation

During Pregnancy

For Nursing Mothers

FRUTOSEN

The Laxative

Par Excellence

For Children

Palatable No Griping

In 4-ounce bottles

FRUTOSEN DRUG CO.

Boston, Mass.

FOR SALE
"THE HERMITAGE"
GROVELAND, MASS.

Ideal for Sanatorium or Summer Home.

Mansion on side hill overlooking Merrimack river, 12 acres of land, fruit and beautiful shade trees. Terraces and southern exposed lawn lead to a small pond and fine grove. Fifteen rooms, modern conveniences, curtains and screens. Owner leaving town, will sell at great sacrifice.

Telephone Haverhill 830, or write

FRED A. BREWSTER, GROVELAND, MASS.

WAPPLER

ELECTRO-MEDICAL APPARATUS

CYSTOSCOPES, URETHOSCOPES,
PROTOSCOPES, AUROSCOPES,
OPHTHALMOSCOPES
And Other Electric Lighted Instruments
REPAIRING, LAMPS FITTED AND SUPPLIED

CHAS. H. KEHLENBACH, 1074 Boylston Street

SALES AGENT BOSTON, MASS.

TEL. BACK BAY 8116

CHARLES B. TOWNS HOSPITAL

For definite hospital treatment of toxic addictions and their sequelae, including those resulting from use of drugs, alcohol and tobacco, as well as toxemias arising from morbid processes such as under-oxidation, faulty metabolism, etc. Physicians are invited to accompany the patient and supervise definite medication and physical after-care.

Situated directly across from Central Park. Provided with every useful facility for hydro- and electro-therapy. Outdoor exercises and physical training under competent director. Utmost privacy if desired. Definite fee charge fixed in advance for all services. Correspondence invited. Literature on professional request.

CHARLES B. TOWNS HOSPITAL, 293 Central Park West, New York City

BOURNEWOOD HOSPITAL

SOUTH STREET, BROOKLINE, MASS.

Established 1884

For a limited number of cases of Mental and Nervous Disease only
Post Office, Chestnut Hill. Telephone, "Parkway" 300
Nearest station, Bellevue, N.Y., N.H., & H. R.R.

GEORGE H. TORNEY, M.D.
Physician in Charge

HENRY R. STEDMAN, M.D.
Consultant

CHANNING SANITARIUM, Inc.

Wellesley Avenue, Wellesley, Mass.

(Established in Brookline, 1879. Transferred to Wellesley, 1916.)

Seven new buildings on fifty acres of high woodland. Sleeping porch and private bath for each patient. Large and small suite cottages. Separate buildings for men and women. Facilities for occupation and diversion. Complete equipment for Vichy, Nauheim and electric baths and other forms of hydrotherapy. Alpine lamp for heliotherapy.

Especially designed and equipped for the care and treatment of nervous cases.

DONALD GREGG, M.D. WALTER CHANNING, M.D.

Professional Cards

RING SANATORIUM AND HOSPITAL

Inc.

Arlington Heights, Massachusetts

Eight Miles from Boston
Telephone, Arlington 81

For Chronic, Nervous and Mild Mental Illnesses. Five separate houses permit of segregation and a variety of accommodations.

Boston Office—By appointment
496 Commonwealth Ave.
Telephone, Back Bay 8774

ARTHUR H. RING, M.D.,
Superintendent.

Dr. Mellus' Private Hospital

FOR MENTAL DISEASES

419 Waverley Avenue, Newton, Mass.
Reached by train to Newton, or by electric cars *via* Commonwealth Avenue to Grant Avenue.

Edward Mellus, M.D.

DR. TAYLOR'S PRIVATE HOSPITAL

For the Treatment of
NERVOUS DISEASES
ALCOHOLISM AND DRUG ADDICTIONS

House newly equipped and furnished, skilled attendants, good food, and comfortable rooms at moderate rates.

Methods of treatment are those proved best after 17 years' successful experience.

FREDERICK L. TAYLOR, M.D.
45 Centre Street, Boston
(Near Eliot Square) (Roxbury District)

MRS. SPINNEY'S HOUSE

A restful home for invalids and elderly persons, especially for the building up of convalescents amid attractive surroundings. Spacious piazzas, well stocked library, trained attendants.

MARY E. H. SPINNEY
17 Parley Vale, Jamaica Plain, Mass.
Tel. Jamaica 2230

"BELLEVUE"

Superior homelike accommodations for five patients. Nervous and Mild Mental Disease, selected cases of Alcoholism, and Elderly Women for whom medical supervision is desired, are received.

MARY W. L. JOHNSON, M.D.
158 WALCOTT ROAD, CHESTNUT HILL, MASS.
Telephone, Brookline 5381-W

WOODLAWN SANITARIUM

FOR THE CARE OF EPILEPTICS

DR. H. W. HAMMOND, *Supt.*

WEST NEWTON, MASS.

tf

Wiswall Sanatorium

Inc.

A Sanatorium for the Treatment of Nervous and Mental Diseases

New Buildings, every facility for comfort; in midst of twelve acres of high land, covered with beautiful oak and pine trees, fully equipped for hydrotherapeutic and electrical treatment.

H. O. SPALDING, M.D.,
Superintendent
E. H. WISWALL, M.D.,
Asst. Physician
Wellesley, Mass.
Telephone, Wellesley 261

DR. GIVENS' SANITARIUM

(THE STAMFORD HALL COMPANY)
STAMFORD, CONN.

For the scientific treatment of Nervous and Mental diseases, Drug and Alcoholic addictions, and General Invalidism. Completely equipped for the care and comfort of patients—Hydro-Therapy, Electro-Therapy, Massage, Occupational Therapy and Amusements.

Located in a beautiful natural park of 100 acres, with numerous detached buildings, insuring privacy.

Fifty minutes from New York City on the New Haven Railroad.

Address
Frank W. Robertson, M.D., Pres. and Med. Dir.
Phone. 70 Stamford
New York City Office: 412 West End Ave.
Monday, Wednesday, and Friday at noon.

WOODSIDE COTTAGES

FRAMINGHAM, MASSACHUSETTS
BOSTON OFFICE, 178 COMMONWEALTH AVE.
TEL. BACK BAY 808

A small sanitarium, pleasantly located on high ground, especially adapted to the care of chronic invalidism, rest cases, convalescents, and the aged. Separate groups. Committed cases not received.
Tel. Framingham 26.

FRANK W. PATCH, M.D.

GLENSIDE

For Nervous and Mental Diseases
6 Parley Vale,
Jamaica Plain, Mass.
MABEL D. ORDWAY, M.D.
Telephone, Jamaica 44.

HERBERT HALL HOSPITAL, Inc.

WORCESTER, MASS. Established in 1872

A Hospital for the Care and Treatment of those afflicted with the various forms of Nervous and Mental Diseases. Accommodations for a few chronic quiet patients at special rates.

WALTER C. HAVILAND, M.D., *Superintendent*
H. LINCOLN CHASE, M.D., *Resident Physician*

Attleboro Springs

A place for concentrated rest, convalescence from operations or prolonged illness, treatment of nervous and chronic diseases and nutritional disturbances. Mental and tubercular cases not received.

Regulated exercise, massage, hydrotherapy, electrical treatments. Diet scientifically supervised.

Modern building, airy rooms, 100 acres beautiful park and woodlands, spring water, farm and dairy.

Resident doctors and nurses.

Illustrated booklet sent on request.

ATTLEBORO SPRINGS
ATTLEBORO, MASS.
Tel. Attleboro 869.

THE MILLET SANATORIUM FOR TUBERCULOSIS

EAST BRIDGEWATER, MASSACHUSETTS
C. S. MILLET, M.D., MEDICAL DIRECTOR

The Boston office of the Millet Sanatorium, East Bridgewater, Massachusetts, has been removed to
45 BAY STATE ROAD
Dr. Millet may be seen at this office on Tuesdays and Fridays between the hours of 11 and 1 o'clock.

TUFTS COLLEGE MEDICAL AND DENTAL SCHOOLS

The Tufts College Medical School offers a four-year course leading to the degree of Doctor of Medicine. The next session begins September 19, 1921. Students of both sexes are admitted upon presentation of an approved high school certificate and, in addition, college credit indicating two years' work in Chemistry, English, Physics, Biology, and French or German.

CHARLES F. PAINTER, M.D., *Dean.*

Beginning January, 1921, all candidates for admission to the Tufts College Dental School must present evidence of having attended one year in a recognized college or university, and to have passed the subjects of the year. These subjects must include Physics, Chemistry, Biology and English.

Tufts College has arranged a One-Year Pre-Dental Course which fulfills these requirements. A special bulletin describing the course will be sent upon application.

WILLIAM RICE, D.M.D., *Dean.*

For further information, apply to FRANK E. HASKINS, M.D., *Secretary*, 416 Huntington Avenue, Boston 17, Mass.

THE NEW YORK EYE AND EAR INFIRMARY
School of Ophthalmology and Otology
For Graduates of Medicine

Clinics daily by the Surgical Staff of the Infirmary. Special courses in Ophthalmology, Refraction, Operative Surgery of the Eye and Ear, Pathology and External Diseases of the Eye.

The abundant clinical material of this well-known institution affords students an unusual opportunity for obtaining a practical knowledge of these special subjects. Two vacancies in the House Staff exist in March, July, and November of each year. For particulars address the Secretary,

DR. GEORGE S. DIXON, NEW YORK EYE AND EAR INFIRMARY.

HARVARD DENTAL SCHOOL
BOSTON, MASS.

A department of Harvard University

Send for Announcement

A four-years' course

DR. EUGENE H. SMITH, *Dean*

BOSTON UNIVERSITY SCHOOL OF MEDICINE

Founded 1873 Reorganized 1918 Class A

ENTRANCE REQUIREMENTS

A minimum of two college years including Chemistry, Physics, Biology and in addition to English, at least one foreign language.
Men and women admitted upon equal terms.
Students limited to 200.
Students admitted to advanced standing.

INSTRUCTION

All fundamental medical sciences in charge of full-time professors and assistants. Abundant laboratory facilities.

CLINICAL TRAINING

Unusually extensive facilities provided in an approved hospital having 559 beds, with departments of research, neurology, obstetrics, medicine and surgery, specialties, contagious, pediatrics, venereal diseases. All departments except contagious are located within two minutes walk of college.

Ward walks, clinical clerking, pathological conferences, large Out-Patient Department.

Students also receive instruction in Boston City Hospital and Westboro State Hospital for Insane.

Further information and catalog furnished on application to
EDWARD E. ALLEN, M.D., Registrar, 80 E. Concord St., Boston, Mass.

GRAND VIEW SANITARIUM AND HOSPITAL
547 Central Street, Winchendon, Mass.

A Modern Health Resort for Convalescent Cases, Semi-Invalids, and General Medical and Surgical Work. Beautifully located with views of Monadnock in the north and Wachusett in the south. Pine grove. Rates moderate.

Licensed Lying-in Hospital. Confinements a specialty.

Doctors' private patients will receive our special care.

Write for particulars.

Julia A. Nason, R.N., Supt. **Howard N. Nason, M.D.,** Physician

BOSTON NURSES' CLUB, Inc., AND REGISTRY
839 BOYLSTON ST., BOSTON, MASS.

BACK BAY 8787

SWITCHBOARD WITH TWO TRUNK LINES

Graduate Nurse in attendance day and night.

Graduates, Undergraduates, Attendants, Hourly Nursing, Masseurs, Male Nurses.

MISS FLORA E. ROSS, R.N., REGISTRAR

WET NURSES NEEDED
to fill increased demand at
WET NURSE DIRECTORY

Under the direction and control of the Infants' Hospital. Wet nurses may be obtained by telephoning to

THE DIRECTORY, Brookline 2930

Massachusetts General Hospital
Pay Consultation Clinic

To aid in diagnosis in cases requiring the advice of several specialists, members of the staff of the Massachusetts General Hospital will hold clinics at the hospital Tuesday and Friday afternoons at 1.30 P.M.

Physicians desiring to make use of the clinic should refer their cases by letter addressed to the Consultation Clinic, giving a brief history. The object being to establish a diagnosis, no treatment will be given, nor will patients be admitted to the hospital except to complete an examination which cannot be completed in the limited time of the clinic.

Patients are referred back to the doctor who sends them to us. Several visits may be necessary to establish a diagnosis, and when ordered by the clinic staff, no additional charge will be made for such visits. Upon completion of the examination a report will be sent to the doctor who refers the case.

No appointment is necessary.

No treatment given.

Hours: Tuesdays and Fridays, 1.30 P.M. to 2 P.M.

A letter from a doctor is required in every case.

Consultation	$10.00
X-Ray	3.00 to 10.00
Laboratory examination	2.00
Cystoscopy	3.00
Electrocardiogram	10.00

Departments represented:

Medicine	Surgery
Genito-urinary	Orthopedics
Syphilis	Skin Diseases
Pediatrics	Neurology
Nose and Throat	Eye and Ear

F. A. WASHBURN, Sec'y,
General Executive Committee.

Boylston Laboratory

for physicians and surgeons

SUITE 308, 419 BOYLSTON ST., BOSTON

G. B. Whall, Manager

All forms of analytical work promptly executed
Fresh cultures of the Bacillus Bulgaricus made daily

Tel. B. B. 4200

RADIUM

STANDARD CHEMICAL CO.

RADIUM of highest purity in any quantity.

Patented glazed plaques
for superficial conditions.

Tube and Needle Applicators
for deep therapy.

Apparatus for radium emanation
installed by our Department of Physics.

All our applicators and apparatus adopted after having been proven therapeutically practicable.

U. S. Bureau of Standards Certificate.

Our Departments of Physics and Medicine give instruction in the physics and therapeutic application of Radium.

RADIUM CHEMICAL CO.
PITTSBURGH, PA.
BOSTON CHICAGO SAN FRANCISCO
NEW YORK

For DIABETES

The best starch-free foods
are made from

LISTERS DIABETIC FLOUR
(PREPARED CASEIN)

Warranted strictly
starch-free and sugar-free.

Especially useful in a strictly non-carbohydrate diet.

Listers Flour is self-rising and easily made into palatable bread and pastry that satisfy diabetic hunger.
A months supply (30 boxes) $4.85

Ask us what store in your city has it - or it may be sent direct.

Made by LISTER BROS. Inc. 405 Lexington Ave. New York N.Y.

100% SHARP

Bard-Parker Knife

ASK YOUR DEALER

BARD-PARKER COMPANY, Inc. NEW YORK

Physiotherapy

The remarkable results secured in the treatment of our wounded soldiers by the various physiotherapy methods used in the U. S. Reconstruction Hospitals have attracted national attention. The value of physiotherapy has been so clearly demonstrated that the U. S. Government has equipped many of the U. S. Public Health Service Hospitals with apparatus for use in physiotherapy.

Leading physicians now realize that physiotherapy can be of great assistance to them in their general practice. It has shown its value particularly in a large number of chronic conditions, and also in the treatment of occupational injuries received by mill workers and artisans of various kinds.

The Thompson-Plaster Electrical Cabinets supply many of the modalities used in physiotherapy. Write for our booklet "Electrotherapy in the Abstract," which explains the value of these modalities, and gives the technique for their application.

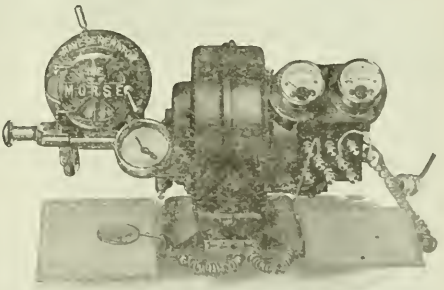
* * *

CLAPP ANDERSON CO.

Specialists in high quality X-Ray and Electro-Medical Apparatus

120 BOYLSTON STREET, BOSTON, MASS.

Morse Wave Generator



The above apparatus is an instrument designed to synchronize normal muscle movements, producing definite wave muscle undulations, either for alternating or direct current effects. The former is exercise and massage and the latter to be used wherever the Galvanic current is indicated. The apparatus can be used on either the alternating or direct current without a transformer. The above features are characteristic of the apparatus.

MORSE-CHAPMAN COMPANY

462 Boylston Street, Boston, Mass.

CALCREOSE

MEET US IN BOSTON

BOOTH 19 AISLE B

American Medical Association Exhibit

June 6th to 10th

THE MALTBIE CHEMICAL COMPANY

NEWARK, NEW JERSEY

We are now manufacturing

SILVER-SALVARSAN

(The sodium salt of silver-diamino-dihydroxy-arsenobenzene)

This has been used with success in Europe for more than two years past. Silver-Salvarsan is in clinical use in the following New York hospitals and clinics:

Vanderbilt Clinic . . . (Service of Dr. Fordyce)
Skin and Cancer . . . (Service of Dr. Stetson)
Bellevue . . . . (Service of Dr. Parounragian)
Volunteer . . . . . (Service of Dr. Baketel)

HA
M E
T Z
LAB
Trade Mark
Reg.U.S.Pat.Off.

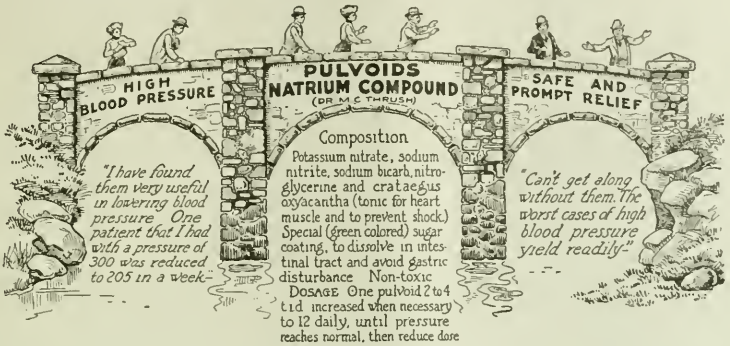
The physicians who are administering the product are well satisfied with the results obtained. Silver-Salvarsan effects a more rapid disappearance of the contagious lesions than the other forms of Salvarsan and practically no reaction follows its administration.

SILVER-SALVARSAN IS NOW READY
for general distribution to the medical profession.

HA-METZ LABORATORIES, Inc.
One-Twenty-Two Hudson Street, New York.

HIGH TENSION — BRIDGE TO SAFETY

A well known heart specialist says: "PULVOIDS NATRIUM COMP. will quickly and safely bring about the reduction of the (high blood) pressure until the basic condition can be removed or modified by indicated treatment."


HIGH BLOOD PRESSURE
PULVOIDS NATRIUM COMPOUND
(DR. M. C. THRUSH)
SAFE AND PROMPT RELIEF
"I have found them very useful in lowering blood pressure. One patient that I had with a pressure of 300 was reduced to 205 in a week."
Composition
Potassium nitrate, sodium nitrite, sodium bicarb, nitroglycerine and crataegus oxyacantha (tonic for heart muscle and to prevent shock.) Special (green colored) sugar coating, to dissolve in intestinal tract and avoid gastric disturbance. Non-toxic
DOSAGE One pulvoid 2 to 4 t.i.d. increased when necessary to 12 daily, until pressure reaches normal, then reduce dose
"Can't get along without them. The worst cases of high blood pressure yield readily."

Canadian Distributor
in bottles of 100 only
R. L. GIBSON
88 Wellington St., West
Toronto

Special Cash-with-order Trial Offer to Physicians and Hospitals Only

200 for $1.00, one time only, or 1000 for $5.00 on 60 days' trial, money back if not satisfied. Trade package, 100 for 75 cts., through jobber or direct plus postage. Canada, 200 for $2.00, cash with order, duty and post paid.

Write for free 32-page brochure on High Blood Pressure by M. C. Thrush, Ph.G., Ph.M., M.D., and ask also for our price list if you dispense.

Manufactured solely by
The DRUG PRODUCTS CO., Inc.
151 Meadow St.
Long Island City, N. Y.

LOESER'S INTRAVENOUS SOLUTIONS

are not "cures"

They are simple solutions of U. S. P. and standard salts with the exact contents plainly stated on the label.

Repeated sterilization during manufacture and careful sterilization at twenty-pound steam pressure of the filled and sealed ampoules, assure absolute aseptic solutions.

Animal experiments and control tests are continually carried on to determine toxicity, and check solutions.

Write for "Journal of Intravenous Therapy," Price List, Clinical Reports, Reprints, etc.

New York Intravenous Laboratory
112 West 21st Street, New York

TRY IT WITH YOUR
BOTTLE-FED BABIES

CASAFRU, A Laxative,

Simple, Pleasant, Efficient

FIND THE INDIVIDUAL DOSE:
FOR ADULTS BEGIN WITH A TEASPOONFUL.
GIVE EVERY NIGHT.

Mason Drug Company
ROSLINDALE
BOSTON, MASS.

POMEROY
ARTIFICIAL LIMBS

SERVICE is a factor in the sale of a Pomeroy artificial limb, the same as in all Pomeroy products. The foot and socket selected to fill the requirements. The use of seasoned and tested materials. The rendering of expert personal fittings. The continuing of our interest and service after the limb is finished.

POMEROY COMPANY

41 WEST STREET, BOSTON

New York - Brooklyn - Newark - Detroit - Chicago - Springfield

PRESS OF JAMAICA PRINTING COMPANY, BOSTON, MASS.